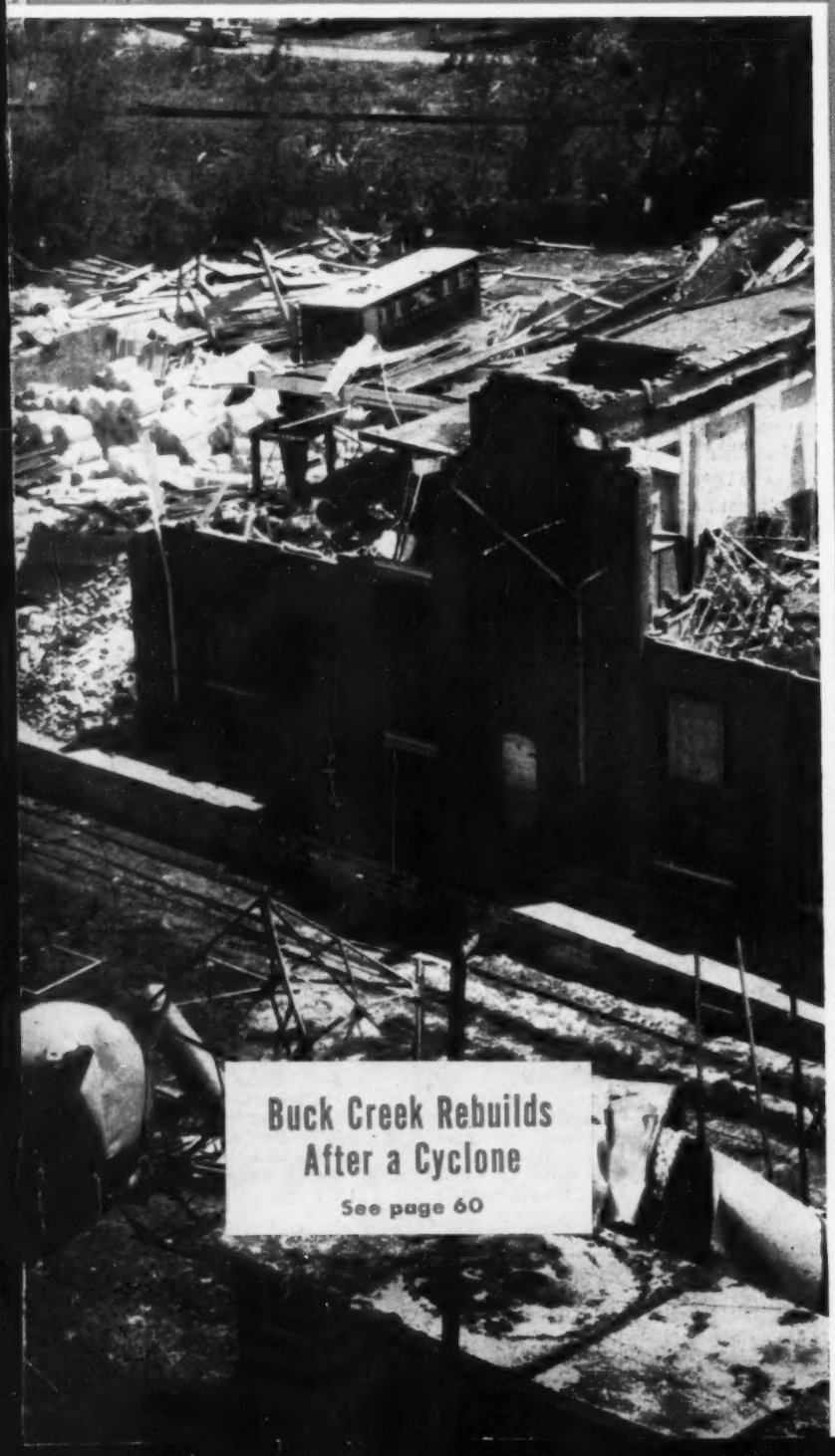
TEXTILE WORLD

A McGraw-Hill Publication ..... **AUGUST • 1954**



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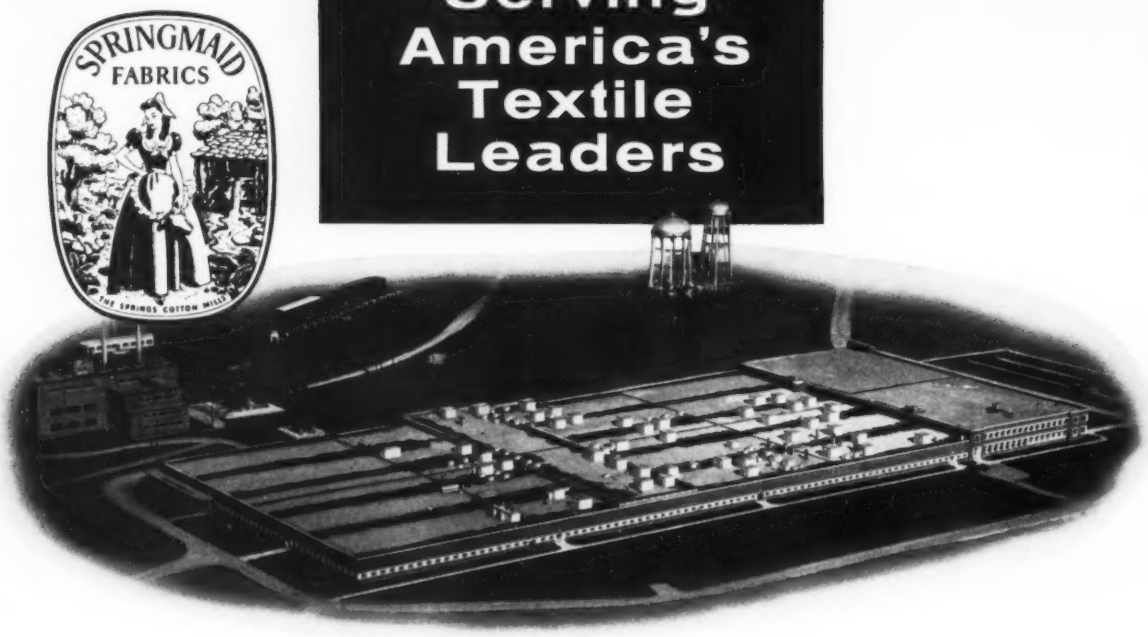
Serving America's Textile Leaders



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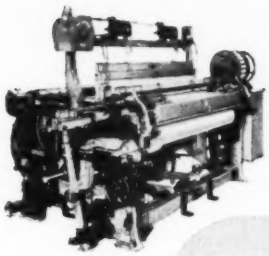

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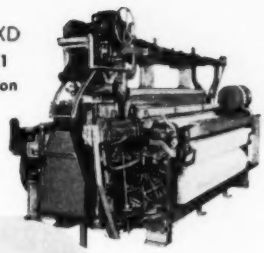
with 2X1
Box Motion



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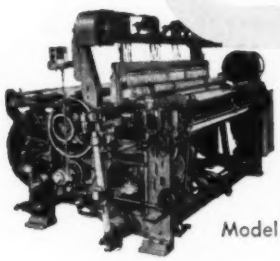
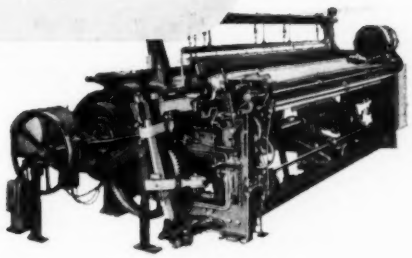


Model XP

Model XL



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THE *Long-Range* VIEW

We're Losing Millions of Dollars

Who's getting it?

• Food • Automobiles

It seems that it is about time for textile men to take a good long look at themselves as businessmen. We are losing millions, maybe billions, of dollars through our own fault.

It is well known that about this time last year textile business dropped drastically and that business in the first quarter of 1954 was almost at a depression level compared with early 1953. Yet, all U. S. business was down the first quarter of this year only about 4%. In a recent report by the McGraw-Hill Economics Dept., this statement was made:

". . . the really important point is that over this past year consumer spending and business spending on capital goods have remained virtually unchanged."

In a recent talk at the International Conference of Man-Made Textiles in Paris, France, Peter W. Webb, of Courtaulds (Canada), gave a comparison of gains in consumer spending made by several industries in North America (corrected to 1939 dollars). The comparison is:

Total gain	33% (app.)
Food	48
Automobiles	46
Housing	33
Household equipment	19
Clothing and shoes	18

The Real Textile Problem

From his study, Mr. Webb draws the following conclusions, which seem completely valid.

Since 1939—

1. Consumers have reduced the share of their income spent on textiles.

2. The textile industry has failed to get its share of the increase in income spent on nonessentials.

3. The business lost by the textile industry has gone to other industries, notably the food and automobile industries.

Why has the textile industry sat peacefully by while these millions of dollars have been poured into other pockets?

It has been pointed out that at least 40% of all consumer spending is optional, which means that whoever gets that money has to influence people to buy their products. It is obvious, then, that the food and automobile industries have been nearly three times as successful as the textile industry in competing for the extra dollars spent by consumers.

Right here, most mill men will relax with the comforting thought that consumer purchases are not their business. Most yarn and cloth manufacturers will go right back to sleep with the nice thought that it is up to garment manufacturers and retail stores to compete for those millions of dollars.

Nonsense.

The astonishingly successful promotion of the use of cotton in the last several years proves that primary producers can influence consumer spending. Many cotton mills are running cotton today only because of that intensive program of sensible research and sensible promotion.

Mills Can Influence Consumers

A good research and promotion campaign for the use of textiles, similar to the one for cotton, could eat heavily into that 40% of consumer spending that is now going mostly to other industries. Millions and millions of extra dollars could be brought to the textile industry.

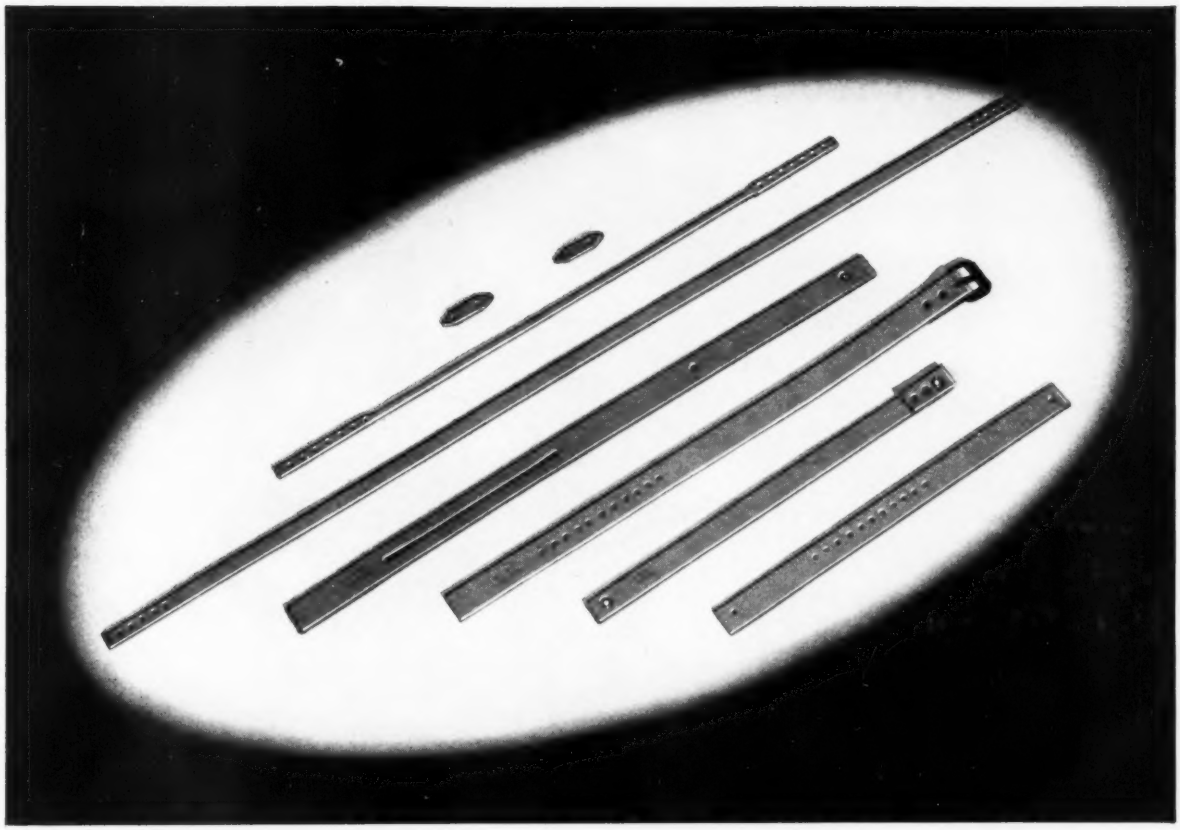
In the book *Making Capitalism Work*, recognized as of classical stature by many economists and businessmen, this statement appears: "Consumer psychology can be powerfully influenced by advertising. A step-up in promotional effort will counter a slowing down in retail trade."

Why, then, do we wryly accept the notorious feast-and-famine cycle of the textile business? Are we very smart if we continue to let the food industry and automobile industry take an extra $3 to our extra $1?

We need to stop fighting the ridiculous battle of the fibers, stop our silly chatter about miracle fibers and wonder fabrics, and stop trying to "educate" consumers with a lot of labels and tags on how to take care of textile products to make up for our own inadequacies. No matter how comforting these things are to textile men, they don't persuade consumers to spend extra dollars for textiles.

We need to get smart in an industry-wide, well-planned way and level a few big intelligent guns at consumers. We need to learn what consumers want and give it to them; then we need to use intensive and effective means for persuading them that they want to buy more textile products rather than more food and automobiles.

O. M. Thomas



How much do You Spend on HARNESS and JACK STRAPS?

It sometimes pays to investigate the costs of those items which become routine purchases. You may find that some comparatively low cost items, such as harness and jack straps are actually skyrocketing maintenance costs. If you find this happening in your mill we suggest you call in a Rhoads Representative. He has Harness and Jack Straps custom-tailored to your specifications.

They're cut from Tannate Special Leather. They're especially flexible. They will work easily over the small harness pulleys. This reduces internal friction that dries out the leather, and gives Rhoads Harness and Jack Straps longer service life. And, because Tannate Harness and Jack Straps are pre-stretched during their manufacture, they retain their correct length and require a minimum of adjustment in service. In addition, Tannate Special Leather has a high tensile strength enabling Rhoads Harness and Jack Straps to withstand the constant tearing, jerking motion that quickly wears out ordinary harness and jack straps.

When you're ready to replace or install harness and jack straps, let us prove the long life and efficiency of Rhoads. There's no obligation.

what is Tannate® Special Leather?

Tannate special leather is a Rhoads exclusive. It's custom tanned to build into it all the characteristics so necessary for efficient loom operation. For specifications, write J. E. Rhoads and Sons, 35 North Sixth Street, Philadelphia 6, Pa.

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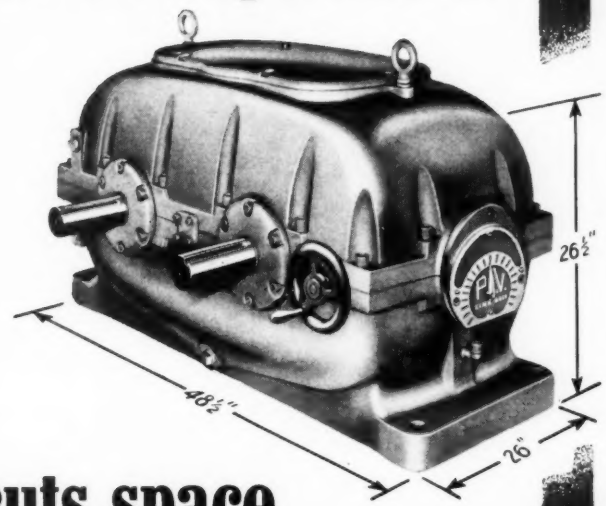
LINK-BELT 25-hp P.I.V. Variable Speed Drive



cuts space requirements up to 50%

LINK-BELT gives you all the advantages of positive, stepless speed changing in high horsepowers, too

ONE of the great advantages of P.I.V.'s positive, all-metal drive is dramatically illustrated by the Size 6. Compared to other speed changers in this hp range, it saves *70 cu. ft. of space!*

In addition, infinitely stepless regulation means you can select the exact speed you want—from maximum to minimum. Unaffected by temperature and atmospheric conditions, all moving parts are totally enclosed and splash-lubricated.

The Size 6 P.I.V. is built in three types: The basic drive . . . with input *or* output gears . . . with input *and* output gears. All are available in a wide range of ratios, 20 to 25 hp.

Get the facts on the Size 6 from your nearest Link-Belt office or distributor. You'll receive a copy of Folder 2374. And for information on the complete P.I.V. line, ask for Book 2274.

LINK-BELT P.I.V. VARIABLE SPEED DRIVE

13.594

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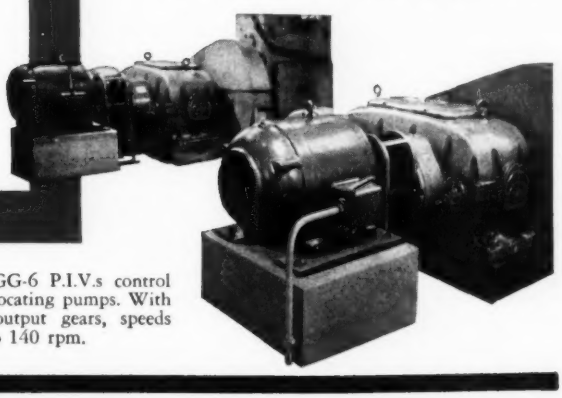

Two Link-Belt HGG-6 P.I.V.s control the speed of reciprocating pumps. With both input and output gears, speeds range from 46.5 to 140 rpm.

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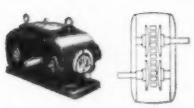
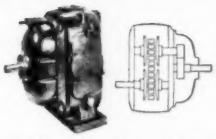
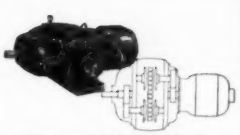
HORIZONTAL OR VERTICAL MOUNTINGS
½ TO 25 HP—
RATIOS TO 6:1



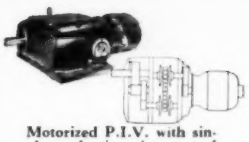
Basic, Positive, Infinitely Variable (P.I.V.) Speed Drive.



P.I.V. with single reduction input or output helical gears.



Motorized P.I.V. with single reduction input and output helical gears.



Motorized P.I.V. with single reduction input and double reduction output helical gears.

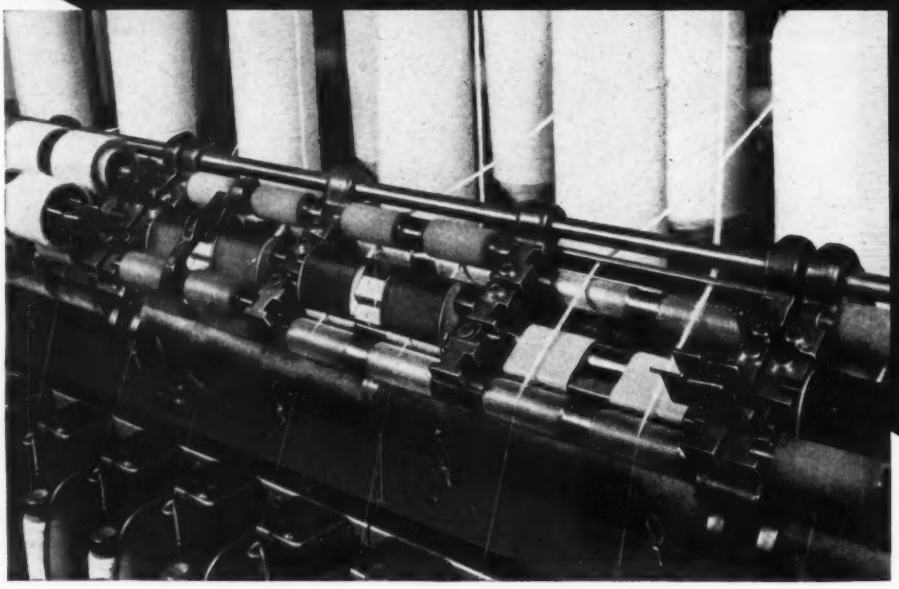
SACO-LOWELL Duo-Roth—

A DRAFTING SYSTEM COMBINING ALL THE QUALITY BUILDING AND COST SAVING ADVANTAGES OF THE SINGLE AND DOUBLE BELT SYSTEMS.

1. The long, thin, flexible bottom apron passes the nose of the apron bar with a small radius of curvature in a manner which allows a close setting between the nip of the aprons and nip of the front roll, a condition necessary for the most efficient fiber control in the final drafting zone.

2. Without exception, mills using the Duo-Roth System have increased their drafts as much as 50 to 100 per cent, and at the same time have produced a yarn of greater strength and evenness.

3. The greater strength and evenness is vividly shown in a Duo-Roth installation producing 21's yarn from .75 hank single roving, employing a 4.52 twist multiple—the break factor secured is 2339. Previously, the same frames running regular drafting were producing 21's yarn from 1.50 hank single. With same twist multiple highest break factor obtainable was 2104.



4. Duo-Roth is cleaner; there is a reduction in clearer waste as the shorter fibres are efficiently controlled. After raising the draft from 19 on Roth to 33 on the Duo-Roth, one mill was able to extend the top roll cleaning period from 24 hours to 48 hours, on a three-shift basis. Another mill, with a 50 per cent increase in draft after changing to Duo-Roth, also extended the top roll cleaning period from 24 hours to 48 hours.

5. Duo-Roth was engineered to be a simple, quickly applied change-over to existing Roth installations. Mills having Roth frames in good condition will find that Duo-Roth will pay for itself in savings resulting from increased draft, reduced cleaning, improved operating conditions and smoother, stronger yarns.

6. Duo-Roth is the only double-apron drafting system which does not develop wear of the cage against the apron driving roll. The standard Duo-Roth middle top roll, driving the apron, is built with a stationary arbor. The cage rests against the stationary arbor, eliminating the possibility of cage wear — a common problem with other systems.

7. The knurled and polished surface of the Saco-Lowell Duo-Roth middle top roll creates a positive and uniform drive for the aprons. Since both of the driving bosses are tied together, there is no variation in the speed of the top roll aprons regardless of the bulk of the strand being drafted. There is no slip or hesitation to create unfavorable conditions in the principal drafting zone.

8. The Duo-Roth, with the adjustable cage is extremely flexible. The correct pressure to establish the necessary degree of fibre control for the most efficient drafting can be quickly attained through easy adjustments.

A BROCHURE FULLY DESCRIBING SACO-LOWELL DUO-ROTH IS AVAILABLE ON REQUEST. SACO-LOWELL ENGINEERS WILL ALSO BE GLAD TO ARRANGE A DEMONSTRATION.

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To Insure LEVEL DYEING ...Add NOPCO® 1425-B

AND SUBTRACT 15% to 85% FROM YOUR COST!

No more streaky shades! From now on, you can count on turning out *uniformly* the exact shades you have chosen.

You can use Nopco 1425-B in either of two ways to get this result:

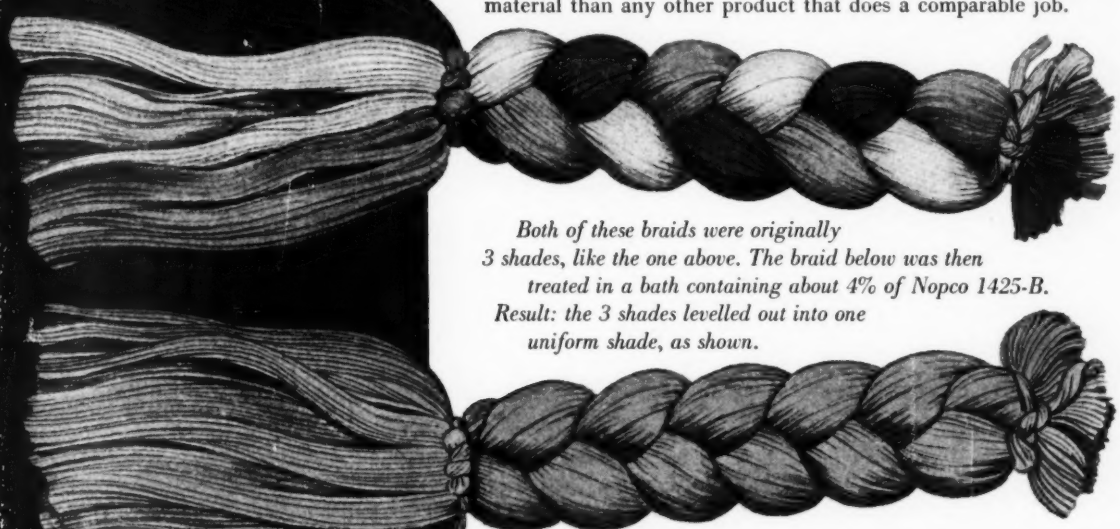
As a preventive. By adding a very small amount (0.25% to 1%) of Nopco 1425-B to the dyebath, you promote level dyeing by controlling the rate of dye absorption by the fiber. This of course is the preferred method.

As a corrective. Somewhat larger amounts (2% to 5%) of Nopco 1425-B may be used to correct streaky or overdyed shades.

NOPCO 1425-B OFFERS THESE ADVANTAGES:

1. More economical. It levels the dyeing instead of resorting to expensive chemical stripping and then re-dyeing.
2. Preserves tensile strength; is non-felting.
3. Does not require re-dyeing—merely re-shading in same bath.
4. Eliminates any danger of machine corrosion.
5. Results in greater leveling and stripping of colors, and the resulting bottom shade is generally cleaner than that obtained from chemical stripping.

In addition to the *big* savings here, resulting from the elimination of stripping and re-dyeing, there is the further striking fact that Nopco 1425-B costs from 15% to 85% less per pound of active material than any other product that does a comparable job.



Both of these braids were originally 3 shades, like the one above. The braid below was then treated in a bath containing about 4% of Nopco 1425-B. Result: the 3 shades levelled out into one uniform shade, as shown.

You'll want to know more about Nopco 1425-B—
and a Nopco representative will gladly work with you to obtain best results. Write today.

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the ink stays on— it won't rub off

VISQUEEN is stronger—won't split, crack, shatter or run.
VISQUEEN is more uniform—yields more units per pound of film.
VISQUEEN won't block—keeps packaging lines at top speed.
VISQUEEN has body—packages are easily filled.
VISQUEEN is stable—won't get brittle, dry out.
VISQUEEN thickness is identified—on invoices and rolls.

Converters of **VISQUEEN** film will be glad to help you apply this superior product to your packaging lines. The coupon will bring their assistance.

Important! VISQUEEN film is all polyethylene, but not all polyethylene is VISQUEEN. VISQUEEN film is produced by process of U.S. Patents No. 2461975 and 2632206. Only VISQUEEN has the benefit of research and technical experience of The VISKING Corporation, pioneers in the development of pure polyethyene film.

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Send me names of converters of VISQUEEN film serving my area.

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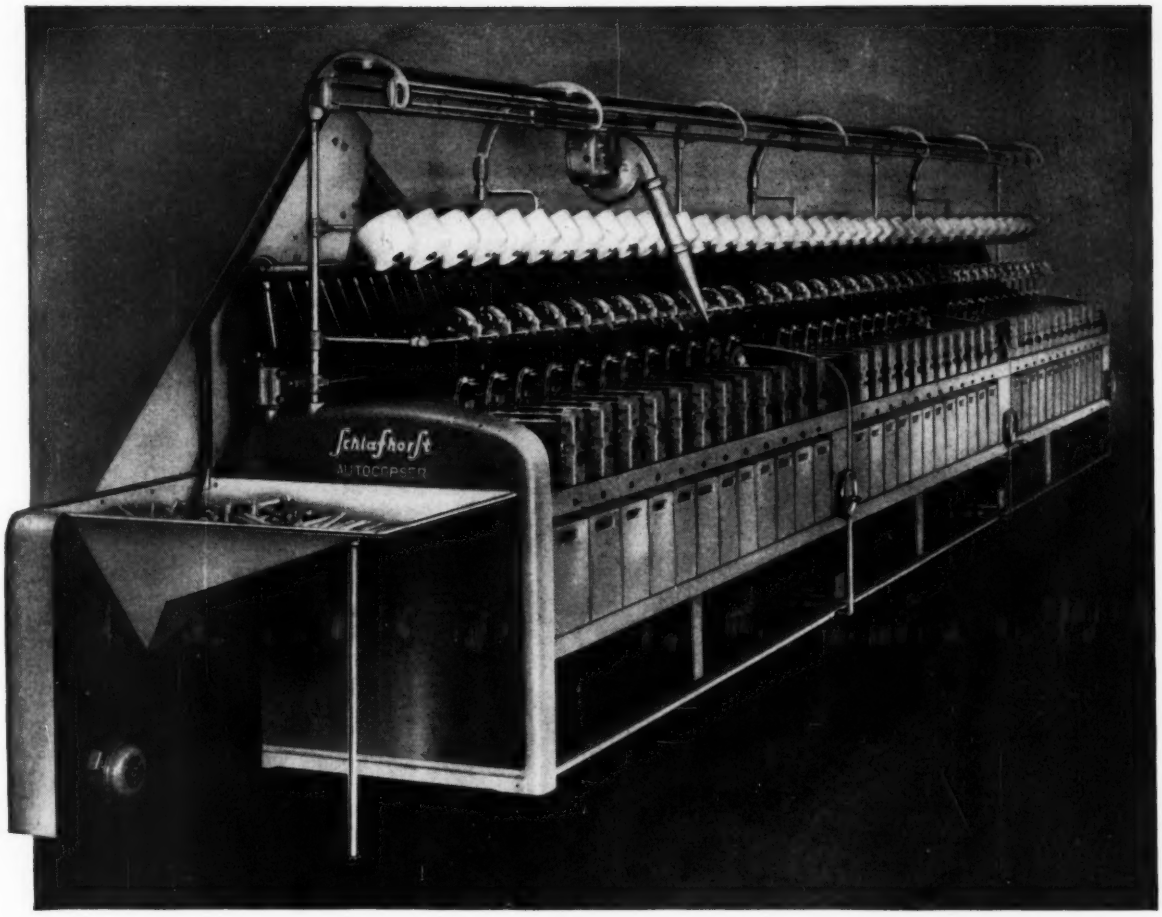

The above illustration shows our fully automatic quiller "AUTOCOPSER".

It is equipped with rotary yarn guides that have no oscillating parts. Quilling speed is limited only by the quality of the yarn and tube material used. To meet the requirements of high speeds up to 12000 revs per minute, the machine is very substantially built. Each quilling head functions independently, entirely unaffected by automatic change of pirns or by stoppages caused by broken ends.

The special shape of the groove of the rotary yarn guide ensures firm winding at the apex of the conical yarn layers, without danger of damaging the yarn. The grooved guide drum is of wear-resistant material and runs in a single one-sided bearing. It follows the build of the quill, and thus simplifies attendance by making the quill easily accessible at every stage of its formation.

Manual servicing is confined to filling the magazines or hoppers (as the case may be) with empty tubes, taking care of occasional broken ends, and to creeling fresh packages. Attendance is reduced to a minimum and simplified throughout.

Quills are firmly held in position between a live centre and a dead one so as to run smoothly and without vibration even at highest permissible speeds.

A novel feeler device controls the advance of the yarn guide by means of a continually revolving threaded rod that is positively driven. The slightest contact between a wide but light feeler roll and the yarn body immediately engages the yarn guide feed with the negligible application of an infinitesimal amount of power. This is achieved by means of an exceedingly simple gearless shifting device developed for this special purpose. The sturdy yet extremely sensitive mechanism has the sole functions of (1) *controlling the point* at which the steadily-turning threaded spindle must provide the necessary feed and (2) the *duration of time* for which this feed is continued.

Moreover, a continual displacement of the yarn layers is obtained by suitably utilizing the alternating feed and retractive shifts.

Upon contact between yarn body and feeler roll, the required lengthwise movement of the yarn guide is obtained each time. Since the feeler roll turns without rubbing against the yarn body, the most delicate yarns can be pirned without damage, at the highest speeds. Control of feed by the above-mentioned shifting device results in perfect pirns.

W. SCHLAFHORST & CO., M. GLADBACH, GERMANY

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for efficient, LOW COST packages!

SONOCO offers a complete variety of standard spool types or can make them to fit your needs in special sizes. Widely used for fringe, tape, braid, narrow and wide fabrics, thread, yarn, cord, rope and many other items. Available with plain, printed and treated heads. For one-time use or reusable.

Inquiries should specify head diameter, traverse, bore and barrel diameter.

SONOCO also makes standard and special tapered base, single head thread spools in fibre and plastic. Barrels can be scored, and with smooth, flocked or ground surfaces. Plastic spools available in a variety of solid colors. Fibre may be ordered with colored lacquer tips for identification.

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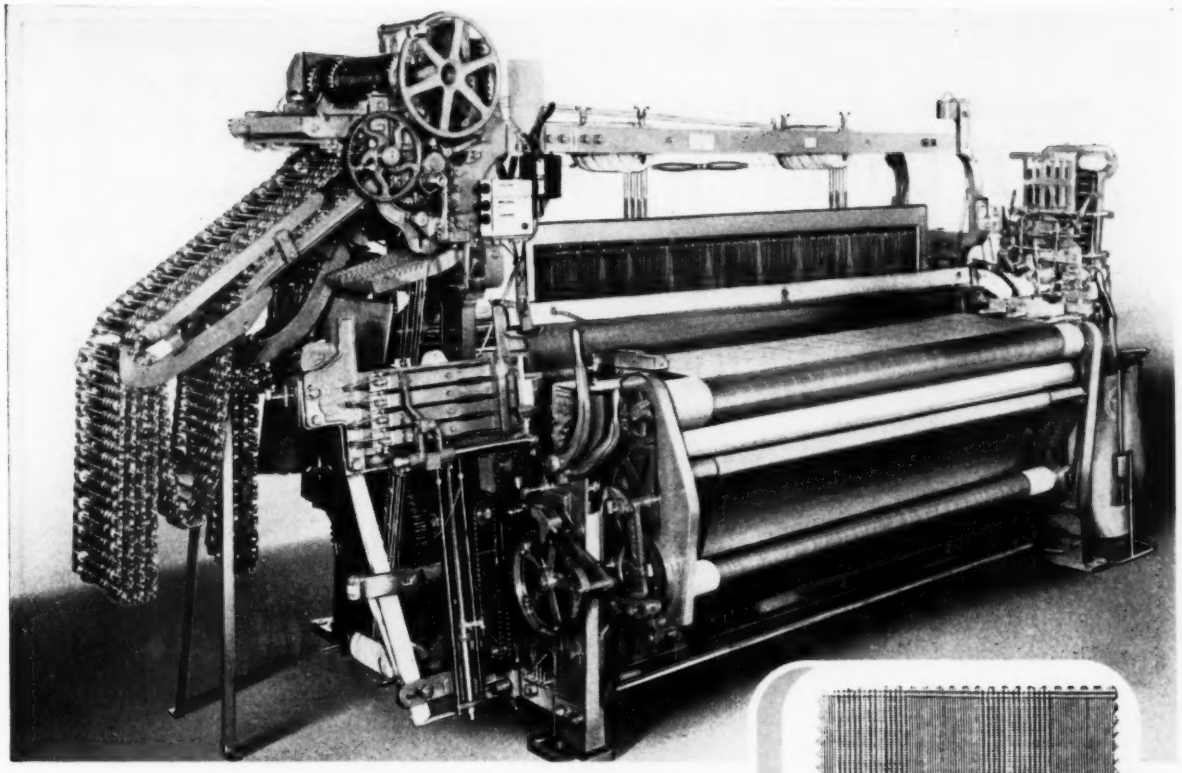
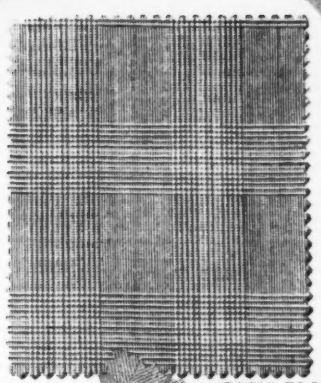


C&K's New
Select-A-Pic Looms
weave many pick-and-pick fabrics
. . . automatically!

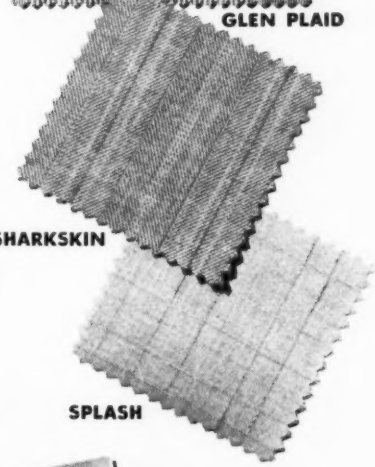
It's easy to "score a hit" . . . when you compose it on C&K's new automatic Select-A-Pic Loom. For then you have *automatic* bobbin-changing operation . . . with *automatic* work-assignments . . . and *automatic* loom speeds . . . on many fabrics which are otherwise woven non-automatically. For instance, fabrics alternating single picks of 2 colors (like sharkskins) . . . or combining single-pick and double-pick sections using 2 colors (like Glen plaids) may be woven automatically using 2 or 4 shuttles. If but 2 shuttles are used for the 2 ground colors, 1 or 2 fancy colors may be employed at the same time for further decorative effect. And so on, through many other variations.

So you can see that . . . starting with the basic W-3 or W-3A 4 x 2 Box Automatic Filling Mixing or Tri-Color Motions . . . and by *combining for the first time in one loom* many features formerly used separately . . . plus the addition of many new mechanisms . . . this new Select-A-Pic has introduced *maximum flexibility* to the C&K Line of Automatic Looms. In addition, increased work-assignments and more output per loom mean lower cost per yard and a better competitive position.

This "Invisible Trademark" Stands Back of the Trademarks of the World's Finest Fabrics . . . which are **WOVEN** Fabrics.



GLEN PLAID



SHARKSKIN

SPLASH

ACTUAL SAMPLES OF THESE FABRICS...

plus complete mechanical details of Select-A-Pic operation . . . are contained in a new illustrated bulletin, just off the press. A copy is yours for the asking . . . *write today.*

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News about

B. F. Goodrich Chemical *raw materials*

Looking for ways to improve textile products?

Check these *Hycar* Latex advantages

Apply this reference listing of the uses for Hycar latex to your textile products or applications. It may give you helpful ideas—point the way to developing or improving more saleable products. For further information and a fact-filled booklet on Hycar latex, please write Dept. HZ-4, B. F. Goodrich Chemical Company, Rose Bldg., Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

Fabrics	Use Hycar Latex—
Cotton	. . . as a permanent warp yarn size to provide abrasion resistance during weaving; and wear resistance to the finished fabric; . . . as after-treatment to improve wearing qualities and to provide a full hand; . . . as a carrier for specialty active agents such as fungicides and flame proofing chemicals; . . . as a binder for waxes and metallic salts used for water repellency or stain resistance.
Rayon	. . . as permanent warp yarn size with starch for increased seam strength.
Rayon Cotton	. . . with urea-formaldehyde resin to prevent deterioration of fibers when large amounts of U-F resin are used for crease and wrinkle resistance; . . . as a binder for pigment coloring and printing; . . . as a binder for non-woven fabrics.
Cotton Wool	. . . as after-treatment to reduce crock particularly with red naphthol dyes.

Hycar Latex

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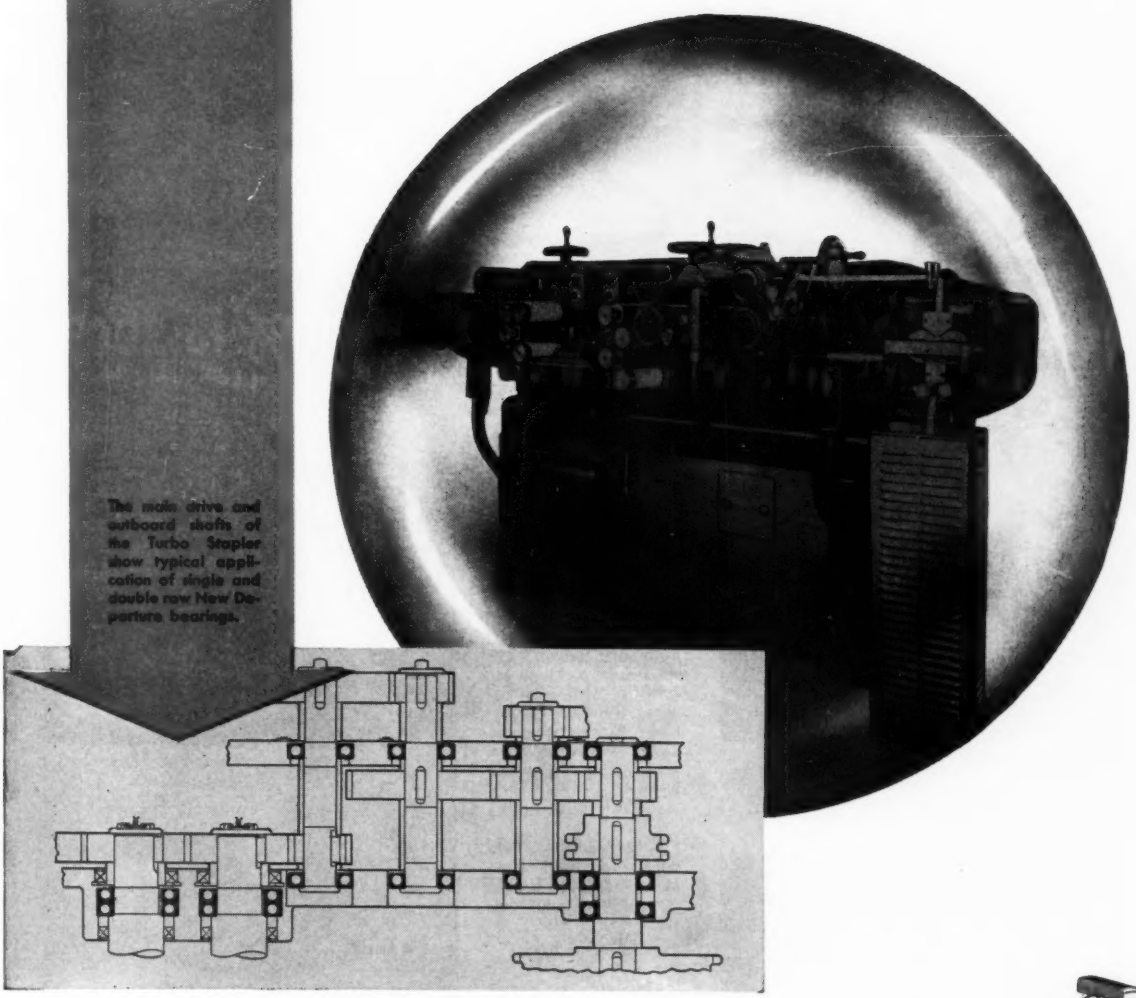
GEON polyvinyl materials • HYCAR American rubber • GOOD-RITE chemicals and plasticizers • HARMON colors

56 New Departures in the New Turbo Stapler



The main drive and outboard shafts of the Turbo Stapler show typical application of single and double row New Departure bearings.

New short cut to staple fiber spinning! The new Turbo Stapler reduces tow to sliver in *one machine* . . . brings about substantial savings in processing operations.

Mounted on New Departure **ball** bearings, shafts of this machine are held in smooth-running, rigid alignment, assuring uniformity of product.

Most of the 56 New Departure **ball** bearings in the Turbo Stapler are single or double seals. Keeping lubricant in . . . fibrous foreign matter out . . . New Departure sealed bearings offer the kind of oil- and grease-free conditions demanded by textile manufacturers. And, they reduce maintenance to the minimum, too!

For complete information—talk to your New Departure textile bearing engineer, today!

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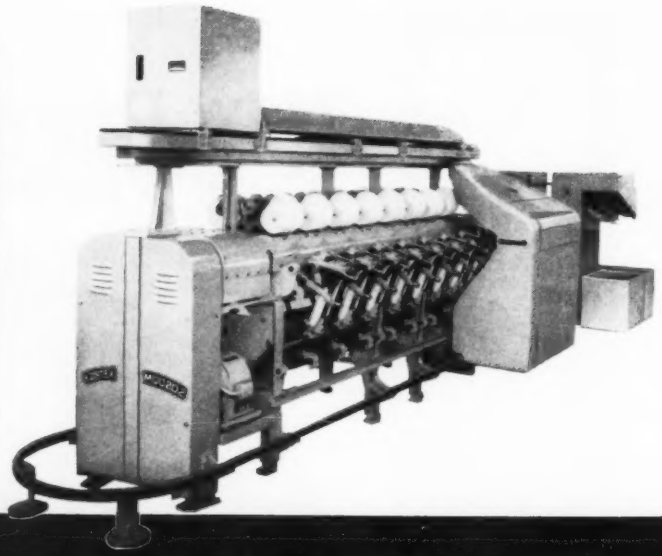
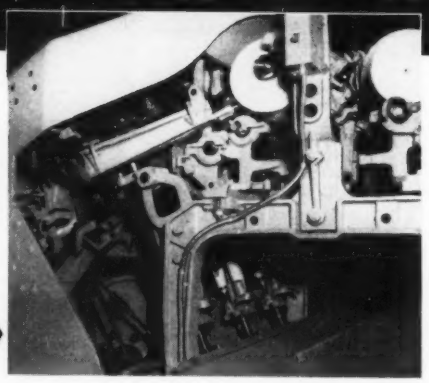
Model 202
AUTOMATIC CONE WINDER

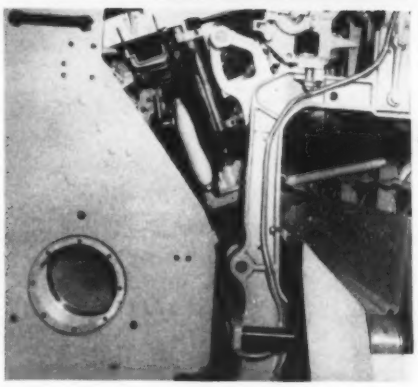


Here's Why It Increases Production 100% to 300%

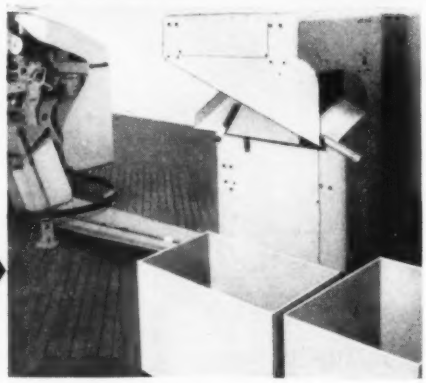
Operator's only duties are to drop full bobbins in chutes, put loose end in clip, don and doff cones and thread up new ones as needed.



Automatic tender travels around machine on rails — aspirator ignores end that is running, picks up ends down, which are then tied into weaver's knots.



Full bobbin moves into supply position from chute, as empty bobbin is automatically doffed.



Model 202 automatically sorts partially filled and empty bobbins, conveying them to two separate bins.

Automation increases production vastly over non-automatic winders — and for the first time automatically produces cones satisfactory for knitting, identical in quality to those produced on Foster Model 102. Write for full details.

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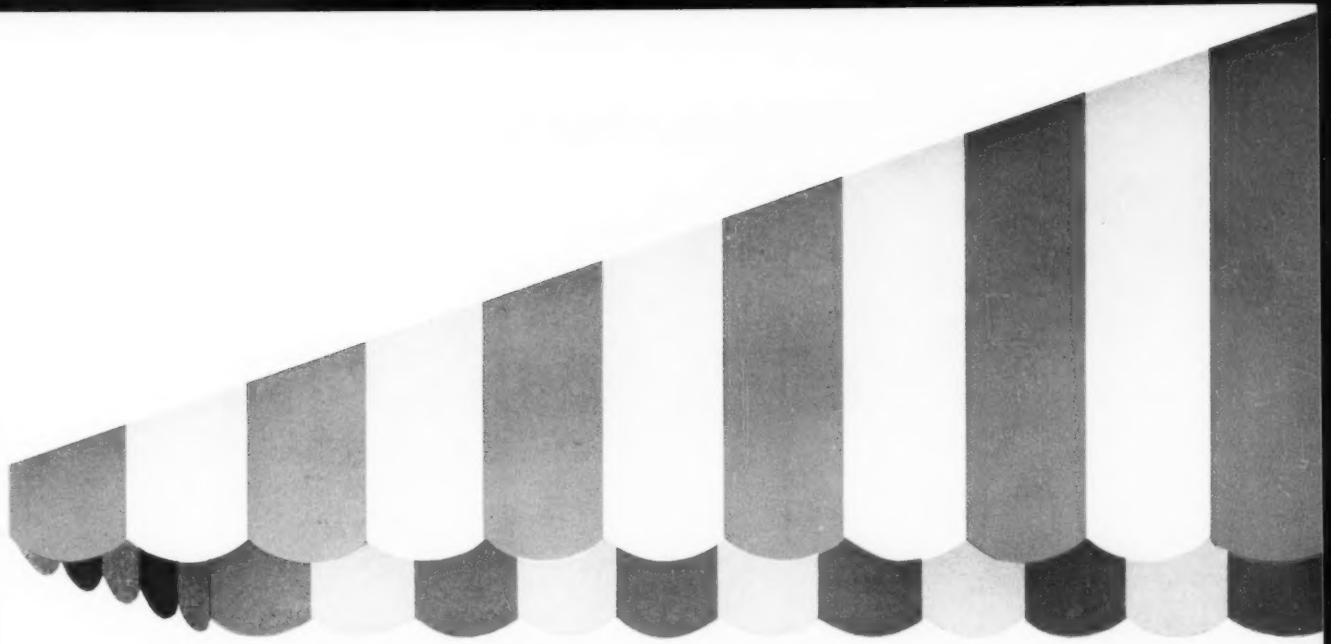

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National Carbanthrene Brilliant Orange RK Paste

This National Dye is the brightest, fastest, and reddest vat orange in our line. It is highly recommended where very good fastness to prolonged outdoor exposure is desired, such as for upholstery, sportswear, work clothes or industrial uniforms, draperies and other fabrics.

National Carbanthrene Brilliant Orange RK Paste has very good to excellent light fastness; excellent fastness to laundering, boiling soap, chlorine and peroxide bleaching, stoving, mercerizing, cross dyeing, acids and alkalis, dry cleaning, perspiration and sea water.

An anthraquinone vat unaffected by metals in the dye bath, it is suitable for all methods of dye application. Crease resisting resin finishes do not affect the shade, do improve light fastness slightly.

For samples, data and prices write or phone our nearest office.

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Kind yours for extra uses
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Attractively printed Gair shipping boxes double as sales promotion aids—giving prominent display to brand names while traveling through the channels of distribution. Prospects along the way—from factory to warehouse, to store, to home—see these sales messages.

Look around. You'll notice that products from paints to peanuts, from soaps to stoves carry colorful, well-printed identification on their shipping boxes.

What about yours?

Remember, this traveling display is economical. You own the "billboards". . . for just the cost of plates and printing you add a strong link to your promotional chain.

To learn how your shipping box can double as a sales promotion aid, check with the Gair plant nearest you. Learn, too, how Gair's assured supply source, engineering ability and delivery service help give you the best in corrugated or solid fibre shipping boxes.

Ask for our booklet on the sealing of boxes.

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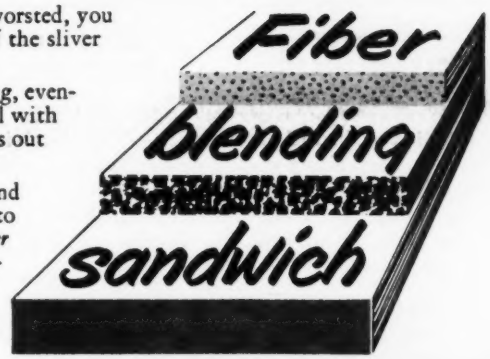
COLORS When blending colored fibers for Bradford or French worsted, you can actually see the colors spread evenly across the width of the sliver as the *melangeur's* layers are sandwiched together.

SYNTHETICS The laboratory will confirm the same deep blending, evenness of sliver and weight regularity in blends of natural wool with synthetic fibers or cotton. One high production *melangeur* cuts out many doubling-blending operations.

FASTER Further drawing progresses faster, with less attention and consequently at lower cost. When you are considering ways to improve blending, remember *melangeur* is French for *blender* and is manufactured by the Societe Alsacienne de Constructions Mecaniques. In America, Atkinson, Haserick & Co. offers engineering, installation and parts service for *melangeurs* and all the preceding and following operations, an unequalled service to worsted mills.



3 Dimensional Blending

In this *melangeur* (mixer intersecting), the different fibers are formed into a sandwich blend. Perfect regularity is obtained in all dimensions: cross sections at any point in the length of the sliver will not vary in composition. May we show you a blended sample, as delivered into this rectangular can or wound into a ball?

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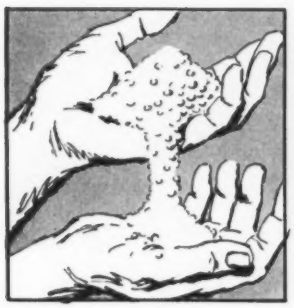
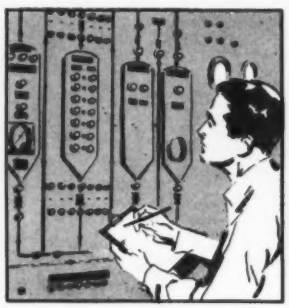
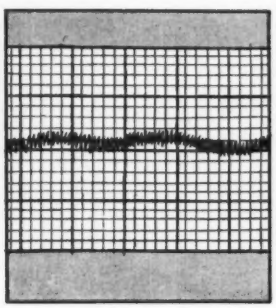


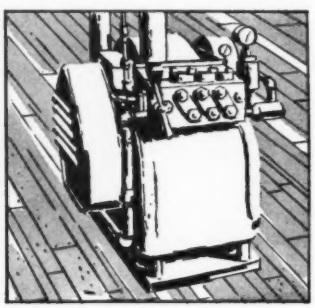
GREATER CLEANLINESS



SUPERIOR UNIFORMITY



STABILITY OF VISCOSITY



IDEAL FOR HOMOGENIZERS

Globe® brand corn starch—This starch is ideal for warp sizing carded or combed yarns where a thick boiling starch is advantageous or for use in homogenizers. Globe Pearl Corn Starch produces strong films, reducing breaks on the slasher and loom.

Eagle® brand corn starch—This thin boiling starch is popular for warp sizing carded and combed yarns. Available in all fluidities which produce viscosities required to maintain correct size concentrations for best weaving.

Hercules brand corn starches—Oxidized starches are used in a wide variety of sizing applications. They produce a smooth but tough, clear film.

Globe® Gum has been popular for many years for warp sizing spun rayon. It has the superior qualities recommended for easy de-sizing.

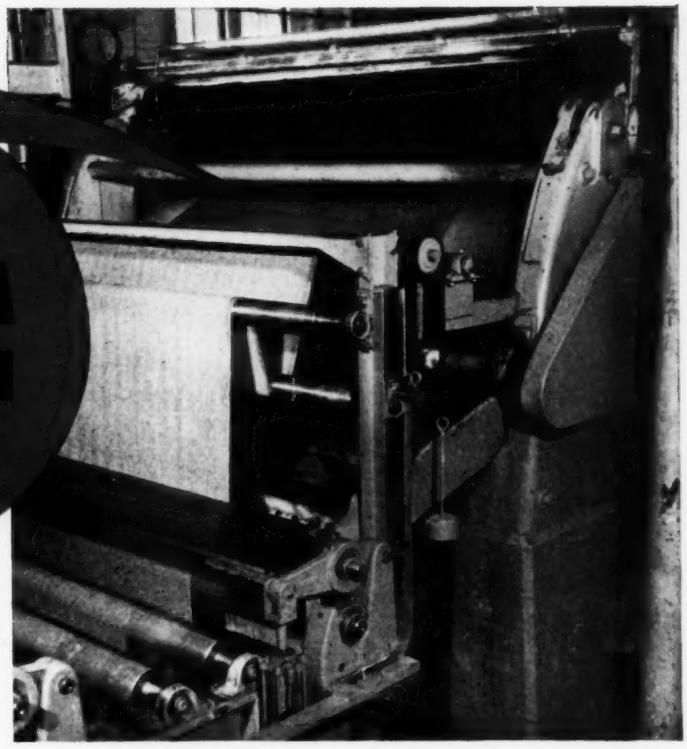
Globe brand extra thick starches make a smooth, lardy paste for backfilling and printing.

Globe Gum and Dextrines fill many finishing requirements. They are versatile and are in increased demand because of their application ease, and full compatibility with other size ingredients.

***TAKE ADVANTAGE** of our free technical service. Our lab and field experts will welcome the opportunity to help you with actual production problems. Write us today.

CORN PRODUCTS REFINING COMPANY • 17 BATTERY PLACE, NEW YORK 4, N. Y.

for UNIFORM EXTRACTION *here*



Outstanding performance of MICROROK bottom roll in this carbonizer resulted in substantial economy of maintenance costs.

STOWE-WOODWARD

MICROROK® BOTTOM ROLLS

To provide the squeezing action which insures uniform acid extraction and eliminates shaded goods, the MICROROK roll above was installed in a carbonizer in a well known textile finishing plant.*

More than 2 years of round-the-clock operation have demonstrated exceptional performance. Its unusual wearing qualities were proved when micrometer tests showed not even .001" loss of crown. Chemically inert, the MICROROK roll is impervious to acid deterioration.

Based on this extraordinary record of performance, the plant superintendent estimates that the MICROROK roll should provide continuous maintenance-free service for 5 years.

Compared with conventional rolls normally requiring regrinding at least annually, this represents an important saving . . . both in maintenance costs and in the elimination of down time involved in the removal of hard-to-get-at bottom rolls.

Ask your Stowe-Woodward representative about MICROROK rolls.

*Name supplied on request

S-W INC.

STOWE-WOODWARD, Inc.

Craftsmen in rubber rolls

NEENAH, WISCONSIN - NEWTON 64, MASS. - GRIFFIN, GEORGIA

No maintenance problems with this instrument!

In spite of all of the development work being done on automatic control instruments, the Bristol Series 500 Air-Operated Controller is still the most dependable and trouble-free — as proved by thousands of installations. And here's why:

It's the simplest to service. Only one adjustment with a ¼ in. wrench calibrates the control system. No other adjustment is needed. Control system can be completely disassembled and, after reassembly (even with replacement parts), can be *exactly calibrated by this one simple adjustment.*

It's completely reliable. One user states, "I'm amazed at the way this instrument performs day-in and day-out with little or no attention. We call it the workhorse controller in our plant. And our plant men like to use it, because it gives them the precision results they need without having to fuss with it".

Its settings are exactly reproducible. Reset rate, derivative time, and proportional band adjustments are accurately calibrated and exactly reproducible. You can instantly reproduce established settings without cut and try.

It uses the world-famous Bristol measuring elements. The measuring systems used in Bristol Series 500 Air-Operated Controllers for TEMPERATURE, PRESSURE, FLOW, VACUUM, DRAFT, ABSOLUTE PRESSURE, LIQUID LEVEL, pH, AND HUMIDITY are the result of 65 years of experience in instrument making and application in practically every industry. Bristol measuring elements are recognized the world over for their accuracy, simplicity, and reliability. There just aren't any better measuring elements made than Bristol's.

For more facts and figures about the Series 500 Air-Operated Controllers, write for free 32-page bulletin A120. The Bristol Company, 103 Bristol Road, Waterbury, Connecticut.

4.27

TRADE MARK
BRISTOL'S
REG. U.S. PAT. OFFICE

BRISTOL

POINTS THE WAY IN HUMAN-ENGINEERED INSTRUMENTATION

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

For uniformity of stitch in high-gauge knitting

you can depend on the uniform construction of Torrington fine-gauge Spring Beard Needles. Such details as the *bend of the crimp* . . . always uniform, always perfectly angled . . . contribute importantly to the stitch perfection achieved with

TORRINGTON NEEDLES

SPRING BEARD • LATCH • LEADED AND PARTS

THE TORRINGTON COMPANY • Torrington, Conn., U.S.A.
Established 1866

Branches: New York · Philadelphia · Chicago · Boston · Greensboro, N. C. · St. Louis · Bedford, P.Q. · Toronto, Canada
Pacific Coast Representative: E. G. Paules, 1762 W. Vernon Ave., Los Angeles 37, Calif. Broadgate House, 7-10 Eldon St., London E.C. 2, England

WE'RE AT HOME...

OUT ON A LIMB!

As part of our Wool Oil Service we Guarantee you Definite Benefits in Writing!

We're willing to go out on a limb—guarantee you definite benefits in writing—because the wool oil service we provide, *the most comprehensive in the industry,* has proved so completely successful wherever used. Here's what we offer:

Scientific Analysis of your mill operations by a Socony-Vacuum engineer.

Complete Engineering Report with recommendations of correct wool oils.

Proved Products that meet desired degrees of scourability and discoloration resistance.

Laboratory Service where tests are made of mill samples to control performance on the job.

Progress Reports to show efficiency of fiber lubrication, recommend further improvements.

Why not take advantage of this exclusive wool oil service to improve *your* operations?

SOCONY-VACUUM
... process products

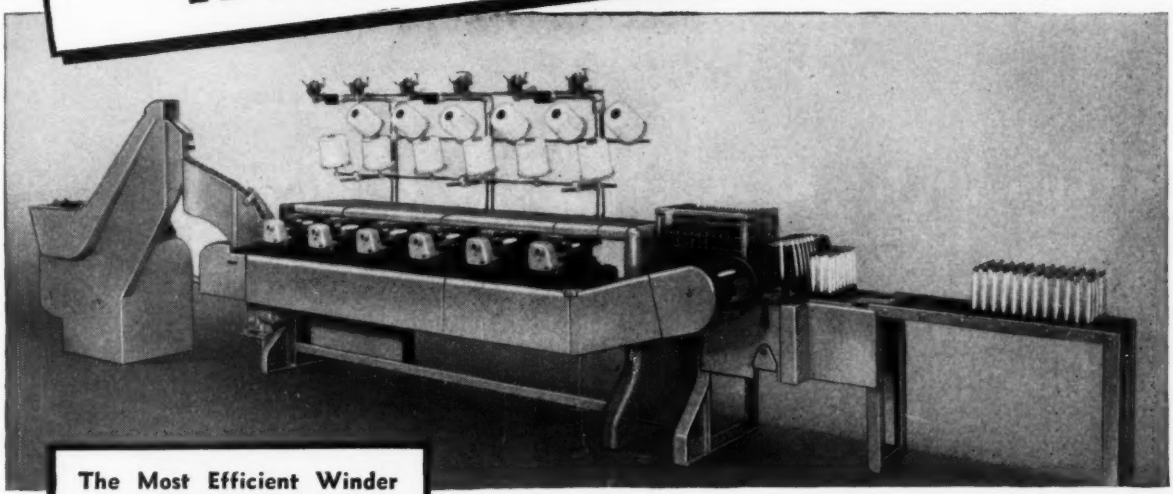
Process Products

SOCONY-VACUUM OIL CO., INC., 26 Broadway, New York 4, N.Y. and Affiliates: MAGNOLIA PETROLEUM CO., GENERAL PETROLEUM CORP.

For more information, write direct or use Reader Service post card.

The New WHITIN SPEED-MATIC Filling Bobbin WINDER

Faster-12,500 RPM
More Flexible
Most Economical



The Whitin Speed-Matic Winder with Automatic Bobbin Loader and Pin Boarding Device

The Most Efficient Winder Ever Offered to the Industry!

The Whitin high speed fully automatic SPEED-MATIC filling bobbin winder is extremely flexible in operation for the diversity in mill requirements. It is simply constructed, inexpensive to operate and maintain, and superior in operation to any other winder.

New Bobbin Loader and Pin Boarding Device

The bobbin loader has been simplified and made highly efficient. A pin boarding device is available for filament and high quality spun yarn mills.

Special Features

- **Individual winding units**
- **Spindle speed, 12,500 R.P.M.**
- **Quiet Operation**
- **Individual Brake-Clutch Motor Drive — No friction elements**
- **Winds Tail-less bobbin**
- **Micro-adjustment of bobbin diameter**
- **Bobbin built without use of feeler**
- **Parallel sided bobbin made, irrespective of empty bobbin taper**
- **All wind ratios achievable at maximum spindle speed**
- **Precise bunch control — up to 30 yards**
- **External Assemblies—accessible and easily removable as units**
  - Pick motion
  - Bunch builder
  - Doff-cam Assembly
- **External self-contained traverse assembly, controls Layer-lok yarn traverse and full range of traverse adjustment.**
- **Bobbin-head fan clears winding area of fly**
- **Straight yarn draw from tension device.**

Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

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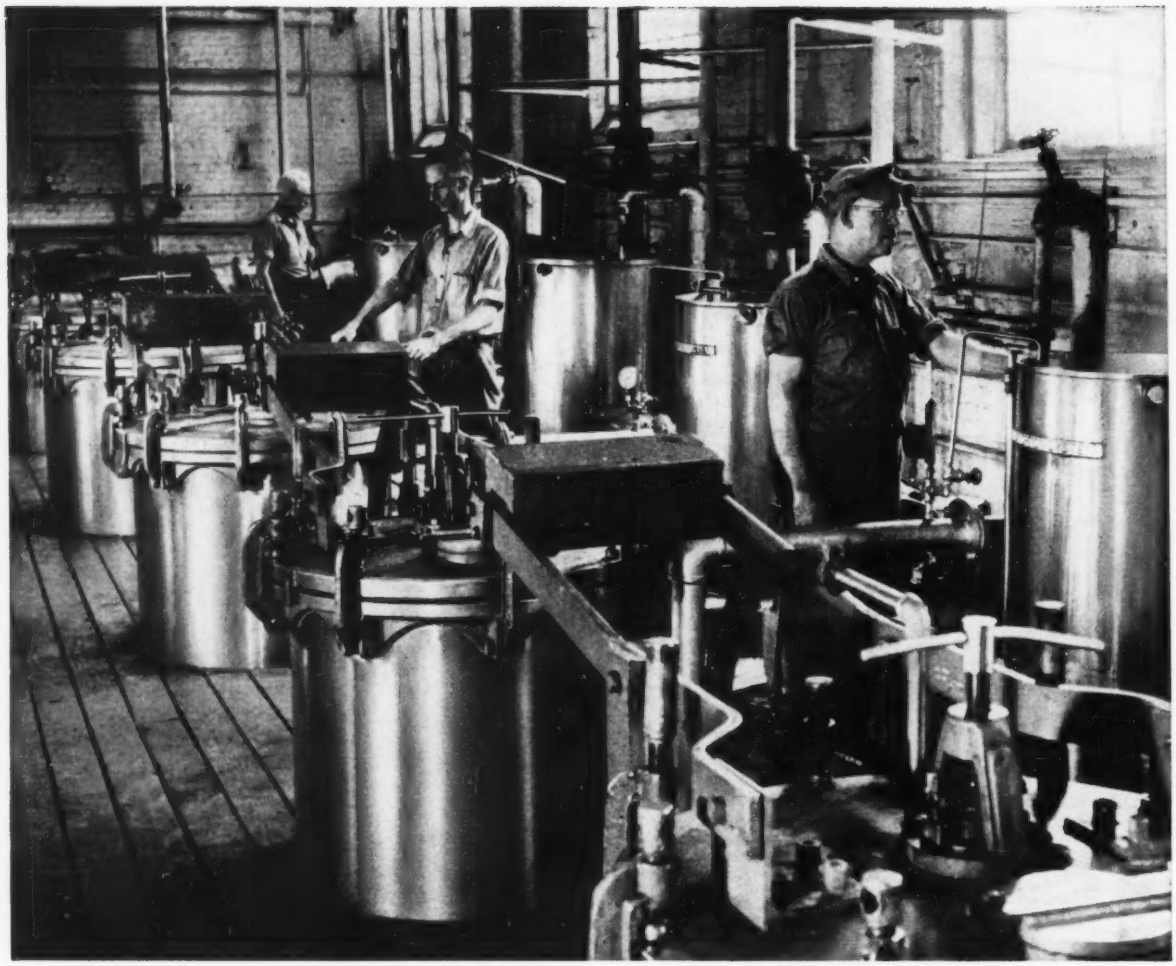


These stainless steel package dye machines have been in constant service since 1949. They are made of Type 316 stainless. Operating pressures are between 45- and 60-psi.

Textile mill president lauds stainless dye machines

This is what the president of a large textile mill said recently about stainless steel dye machines installed in his plant in 1949:

"Stainless steel package dye machines produce 'clean' brilliant colors. Shades are reproduced with exceptional uniformity from batch to batch. Stainless steel is easier to clean and maintain. There is a saving in dyestuff too."

Wet processing equipment made of Armco Stainless Steels has been giving economical service in textile mills for more than 20 years.

Newest of the special grades of Armco Stainless for textile equipment are the "ELC" types. They are ideal for welded equipment exposed to service temperatures below 800 F.

Armco Types 304L and 316L Stainless Steel protect weld areas from intergranular corrosion. Their low carbon content (.03% maximum) prevents harmful carbide precipitation during welding. Cost of the Armco ELC grades is less than corresponding grades stabilized by columbium.

If corrosion alongside the welds is one of your problems, you'll want more information about Armco ELC. Just ask for the "ELC Folder" when you write. Or ask your equipment fabricator about these special steels.

ARMCO STEEL CORPORATION

4334 Curtis Street, Middletown, Ohio

SHEFFIELD STEEL • ARMCO DRAINAGE & METAL PRODUCTS, INC. • THE ARMCO INTERNATIONAL CORPORATION

SANDOZ'

LANASYN

If you're dyeing wool, nylon or silk in yarn, piece goods, top or raw stock, here's a way to do it faster:

Sandoz metal complex Lanasyn colors, dyed neutral or with small amounts of Ammonium Sulphate, cut boiling time an average of 30 to 40 minutes. There's less damage to the fibre and less felting and your goods come through in better condition after dyeing.

Lanasyn colors have excellent fastness properties equal to most chrome dyes. The Lanasyns have a similar dyeing rate and can be used with chrome colors as well as other neutral metallized dyes.

NEW LANASYN BROWN

The most recent addition to the line is LANASYN BROWN 3RL (Pat. Appl. for), a rich, reddish brown distinguished by its superior fastness to light and fulling and freedom from "skitteriness".

Our growing Lanasyn line includes Lanasyn Orange RLN (Pat. Appl. for), Lanasyn Yellow GL, Lanasyn Yellow 2RL (Pat. Appl. for), Lanasyn Blue GL (Pat.), Lanasyn Grey BL, Lanasyn Green (Pat.), Lanasyn Brown RL (Pat.).

Write for complete information including samples and fastness properties on wool, silk or nylon in whatever colors you're interested in. Sandoz branches are in Hudson, Mass.; Fairlawn, N.J.; Philadelphia; Charlotte; Cincinnati; Los Angeles; Montreal; Toronto. *Sandoz Chemical Works, Inc., 61 Van Dam St., New York 13, N.Y.*

3.9

SANDOZ

SANDOZ

THINKS AHEAD WITH TEXTILES

Watch the
SATURDAY EVENING POST
TIME
LIFE
McCALL'S
NEW YORK TIMES MAGAZINE
THE NEW YORKER

AVCOSET* White Knight forge new successes for you!

On and on it goes: the dynamic consumer advertising campaign that continues to spark public interest in the remarkable news of Avcoset rayon fabric washability! We're telling America about Avcoset in the country's foremost mass and class magazines . . . reaching nearly 80,000,000 people!

And – to add more fuel to the fire – there are exciting *regional* newspaper ads . . . tying in with top stores across the land! These ads – big and bold – are reaching audiences of millions *more!*

No other fabrics today give you the impelling promotability of Avcoset rayon. Because Avcoset means *permanent* rayon washability . . . rayon that can go through tub, washing machine or commercial laundry . . . and never shrink out of fit, never lose its color appeal!

A word to the wise retailer, mill-owner, converter, cutter: make Avcoset rayons a large part of your plans. They're really hot . . . and we intend to keep them that way!

AMERICAN VISCOSE CORPORATION

Avisco®

AMERICA'S FIRST PRODUCER OF MAN-MADE FIBERS · 350 FIFTH AVENUE, NEW YORK 1, N. Y.
RAYON, ACETATE, VINYON,† FILATEX® †TRADE MARK

*Registered Trade Mark of American Viscose Corp. for Fabrics and Cellulose Ethers.

OVER 400,000 IN USE

NO FAILURES

The strongest, lightest, best-balanced beams are Aluminum!

More than 400,000 lightweight aluminum warp beams are already in service—*without a single failure from deflection or crushing!* The extra strength of aluminum means reduced damage of fine, expensive fibers during processing and shipping. It means deflection is practically eliminated, and handling and stacking abuses are greatly overcome. Precision machining, plus fully heat-treated beam heads, makes aluminum warp beams stronger, lighter and better balanced than wood!

Warp Beams of Alcoa® Aluminum are supplied by leading beam manufacturers—including:

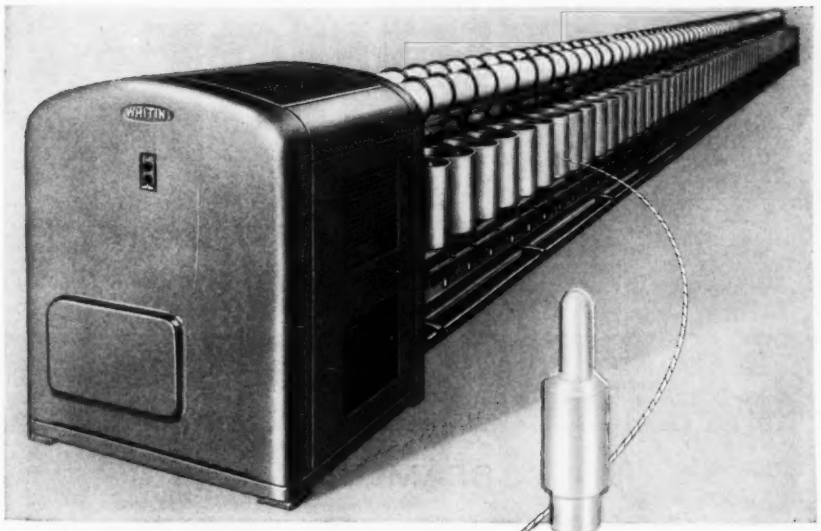
HAYES INDUSTRIES
MILTON MACHINE WORKS
HUBBARD SPOOL COMPANY
BRIGGS-SHAFFNER

For a complete run down on these cost-cutting beams, call your nearby Alcoa sales office—listed under "Aluminum" in the classified section of your phone book, or write: ALUMINUM COMPANY OF AMERICA, 2183-H Alcoa Bldg., Pittsburgh 19, Pa.

ALCOA ALUMINUM

ALUMINUM COMPANY OF AMERICA

Whitin
(31 YEARS)
...FAFNIR



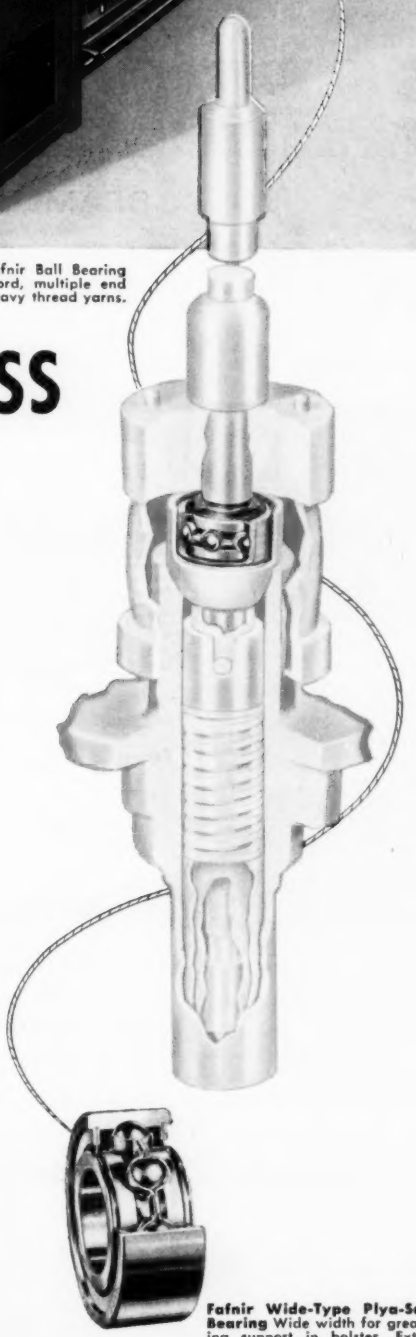
The Whitin CABLE-KING Uptwister, Fafnir Ball Bearing Equipped, is designed to cable tire cord, multiple end tufted cotton yarns, carpet yarns and heavy thread yarns.

PARTNERS in PROGRESS

Twisting heavy yarn from a 12 lb. gross weight package at a speed of 5250 r.p.m., on a machine processing over a half a ton of yarn at a time, dramatically illustrates progress in machine design. This task is performed on the Whitin CABLE-KING Uptwister, developed primarily to meet growing demands of automotive and aircraft industries for improved tire performance. Already in operation processing rayon tire cord, the CABLE-KING has demonstrated outstanding advantages and economies.

In developing this machine, Whitin invited Fafnir to help solve bearing problems. A typical result of such cooperation is the Whitin DINAMIC Type 669 Spindle which performs with exceptional smoothness under severe operating conditions on the CABLE-KING. It is equipped with a Fafnir wide-type double Plya-Seal Ball Bearing. This Whitin-Fafnir development is designed to eliminate any thrust load on the point of spindle blade. Spindle bearing requires minimum of lubrication and insures low power consumption for frames of such a heavy package.

Something more than good ball bearings account for achievements like this. It's the Fafnir "attitude and aptitude" ... a way of looking at bearing problems from the designer's viewpoint, an aptitude gained from over 40 years' experience in the manufacture of ball bearings. Maybe this combination can help you. The Fafnir Bearing Company, New Britain, Connecticut.



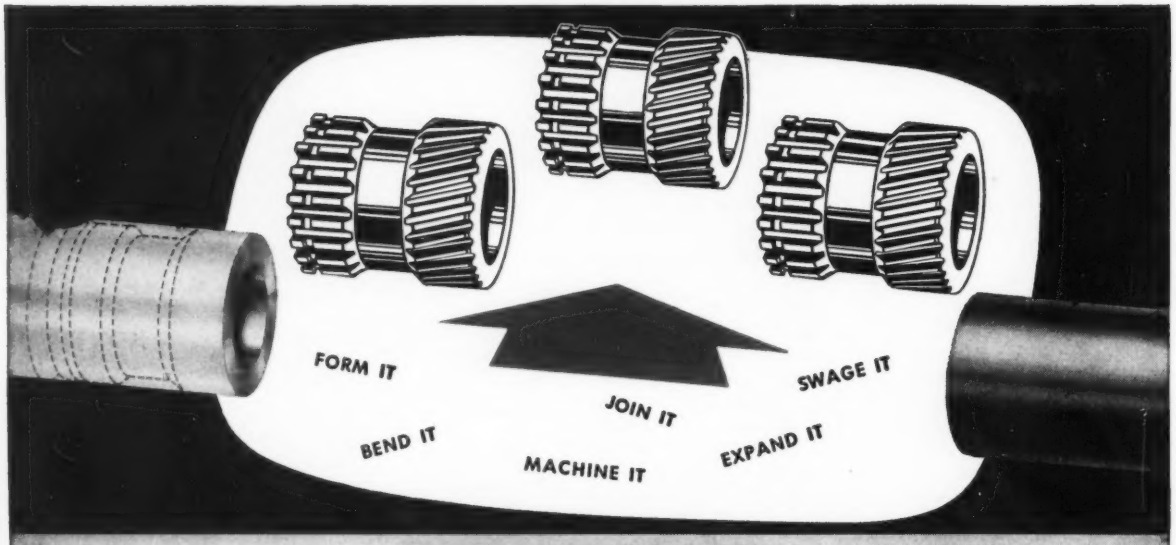
Fafnir Wide-Type Plya-Seal Ball Bearing Wide width for greater bearing support in bolster. Extra large grease chamber, pre-packed. Superior grease retention.

FAFNIR
BALL BEARINGS
MOST COMPLETE LINE IN AMERICA

SERVICE
with
B & W
CARBON STEEL

A — AVAILABILITY
S — SERVICE
Q — QUALITY

SEAMLESS
MECHANICAL TUBING
Saves You Time and Money



B&W SERVICE INCORPORATES:

1. Sound engineering assistance on fabricating problems and procedures.
2. Mutual understanding between B&W and its tubing customers.
3. A nationwide network of district sales offices and distributors, both manned by experienced tubing salesmen.

remember A S Q *is meant for you*

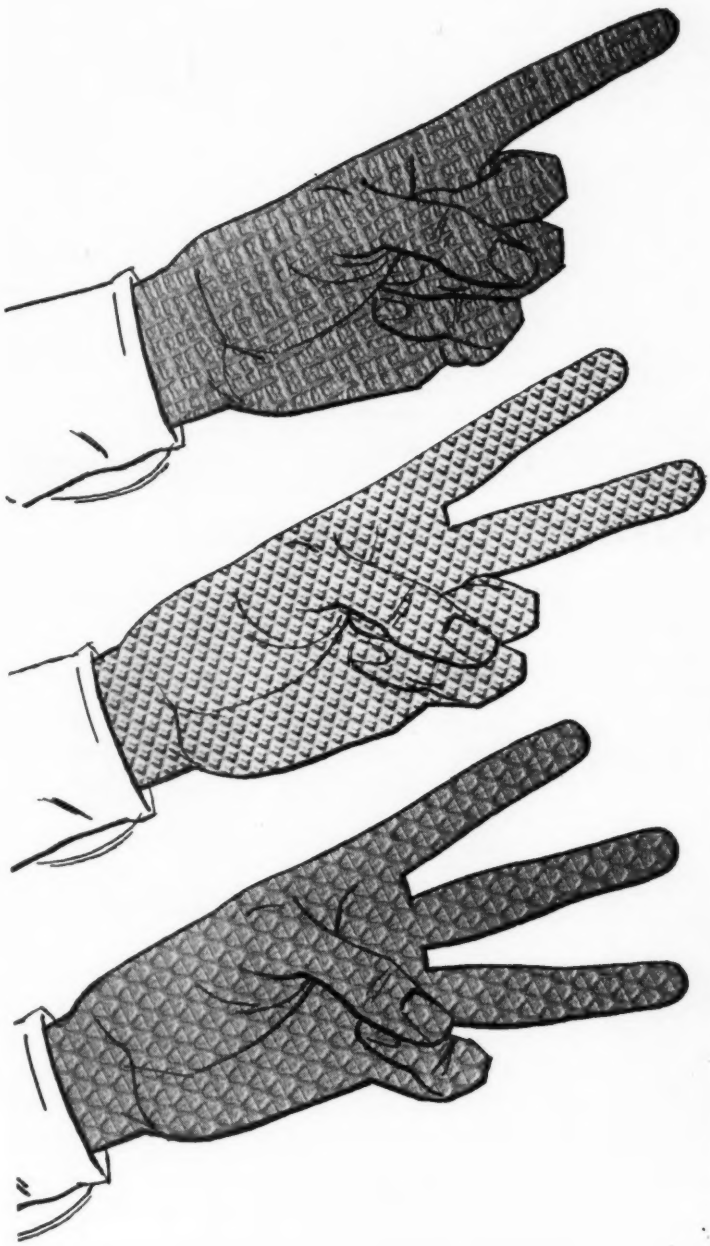
B&W SEAMLESS and WELDED TUBES

THE BABCOCK & WILCOX COMPANY
TUBULAR PRODUCTS DIVISION
Beaver Falls, Pa.—Seamless Tubing; Welded Stainless Steel Tubing
Alliance, Ohio—Welded Carbon Steel Tubing

TA-4050 (CSM)

For more information, write direct or use Reader Service post card.

For more profitable embossing, use Monsanto's 3-point service



A full line of resins for your every need—
melamine and modified urea (Resloom E-50) for embossed effects and crease-resistant applications . . . plus a series of three "AC" catalysts to meet your most rigid curing requirements.

New, unique research facilities—
such as the first lab-scale embossing machine, and other Monsanto-pioneered equipment. Monsanto's resin technology can help you use *the right resin in the right way* to increase your embossing profits.

Experienced technical personnel—
combining years of practical field experience with the latest technical knowledge and equipment to help you solve *your* particular problems. They have led the way to many basic developments in the textiles industry.

RESLOOM E-50 HAS MANY ADVANTAGES

This newest addition to Monsanto's broad line of finishes is a modified urea resin for deep embossed, glazed and Schreiner applications. It produces durable effects with improved hand —causes no yellowing due to chlorine pickup. Resloom E-50 does not build up on texturizing equipment, has excellent storage life and bath stability. It is compatible with hand modifiers and durable to washing. Resloom: Reg. U. S. Pat. Off.

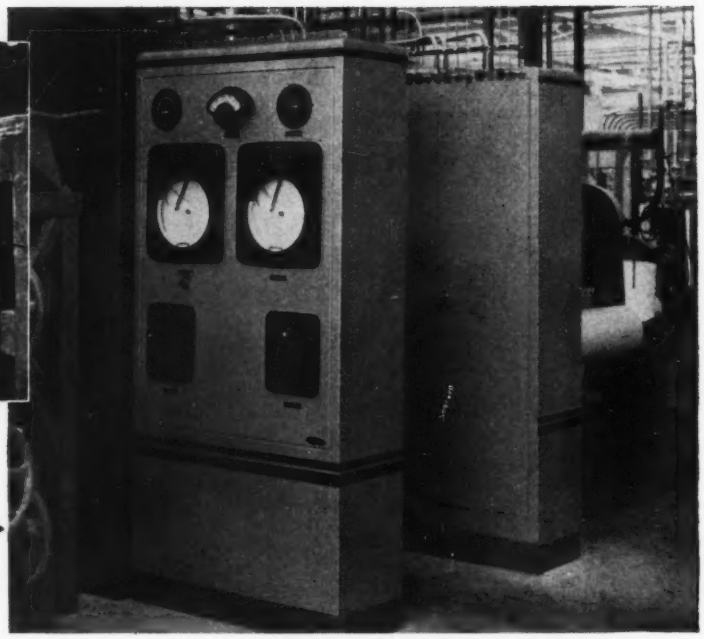
To take advantage of Monsanto's 3-Point Service, just call, wire or write: MONSANTO CHEMICAL COMPANY, Plastics Division, Springfield 2, Mass.

MONSANTO
CHEMICALS—PLASTICS

SERVING INDUSTRY . . . WHICH SERVES MANKIND

For more information, write direct or use Reader Service post card.

This is part of an old-fashioned installation which lacks the convenience and efficiency of modern instrumentation.

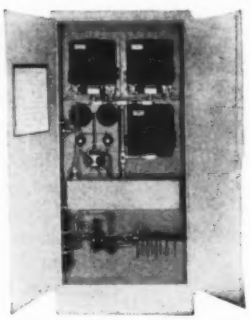


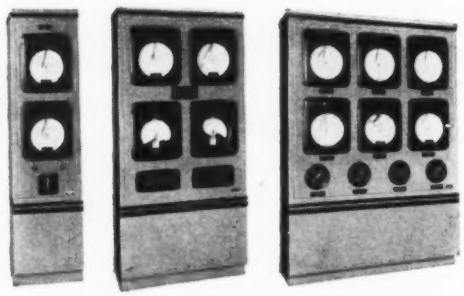
Compare this centralized Foxboro Cabinet installation of similar instrumentation, which saves time for the operator, makes his work more efficient, and gives maximum protection to the precision instruments required for his process.

See what a difference FOXBORO cabinet-mounting can make!

These photos show at a glance how much more efficient and attractive your instrument installation can be if it's integrated and centralized in a Foxboro Cabinet. Not only are the instruments protected from dust and process "atmospheres", but they're conveniently grouped together for more efficient use and easier maintenance. Those "endless steps" of the operator are a thing of the past!

Foxboro will supply a cabinet (or cabinets) to house and protect any number of existing instruments and related devices. Or your order for new instruments can be shipped to you already mounted in cabinets, completely piped and wired, needing only simple power and process connections to be put into operation. Write for illustrated and informative Bulletin 413.



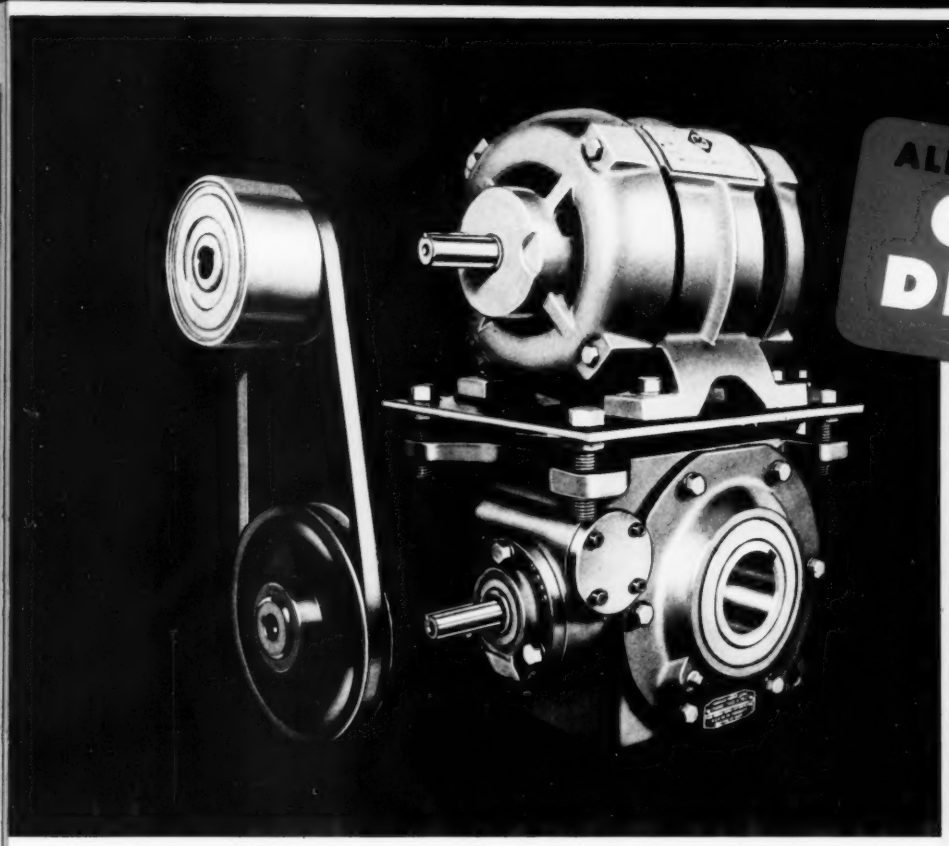


Foxboro Cabinets are available in three standard sizes for 2, 4, or 6 conventional-size instruments (or equivalent). For mounting more than 6 instruments, Foxboro Sectional Cabinets (with open ends) are used . . . bolted together to form desired length. End sections have one closed side to form dust-tight enclosure. Exclusive insert-type panel construction permits easy conversion when process changes so require.

THE FOXBORO COMPANY, 848 NEPONSET AVENUE, FOXBORO, MASS., U. S. A.

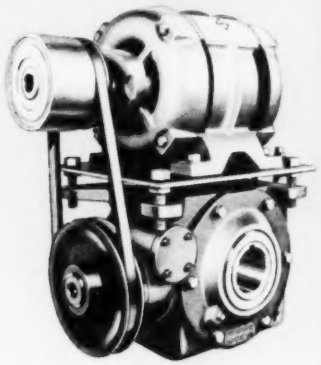
FOXBORO REG U S PAT OFF PROCESS CONTROL CABINETS

FACTORIES IN THE UNITED STATES, CANADA, AND ENGLAND



ALLIS-CHALMERS
CARD DRIVES

Quick-Clean motor used to drive gear reducer through Texrope V-belt drive and mercury clutch. Sheave is adjustable to permit cylinder speeds between 157 and 189 rpm.



Now

Control Cards Individually . . .

Make Card Rooms Cleaner and Safer!

INDIVIDUAL CARD DRIVES solve problems in cleanliness, safety and lighting created by overhead line shafting. With these drives, there is no hard-to-reach overhead structure to clean . . . no dirt and grease to drop into machines.

In addition, your plant will be lighter, cleaner and more modern looking without a forest of shafting and belting hanging from the ceiling. And, with these drives, there's plenty of room on the ceiling for air-conditioning equipment.

Changing to Allis-Chalmers individual card drives is simple. The complete drive unit mounts on your present card cylinder shaft. A torque arm attached to the card keeps it in place. It fits present aisle space. Note that there is no vibration or strain on the card arch, and weight of the drive does not overload the bearing.

Get details from your nearby A-C office, or distributor, or write Allis-Chalmers, Milwaukee 1, Wisconsin for Bulletin 51B7867. A-4411

Texrope and *Quick-Clean* are Allis-Chalmers trademarks.

ALLIS-CHALMERS

MILWAUKEE 1, WISCONSIN

A-C ALLIS-CHALMERS

New Motor sets new standards in handling oscillating loom loads

HERE IS A loom motor specifically designed to carry the loads imposed by speeds of 200 picks per minute. Rotor, stator and bearings all are oversize to give you long life, and low operating costs.

This Allis-Chalmers loom motor is designed around the findings of a thorough research program which revealed the true nature of loom loads.

As a result, this entirely new motor will handle the rapidly oscillating load which occurs during each pick. The rotor has been made extra heavy and in the largest possible diameter to provide maximum fly wheel effect (Wk^2) to meet demands for higher and higher loom speeds.

While this motor is a completely new design from top to bottom, it has been in actual use in quantity for well over a year.

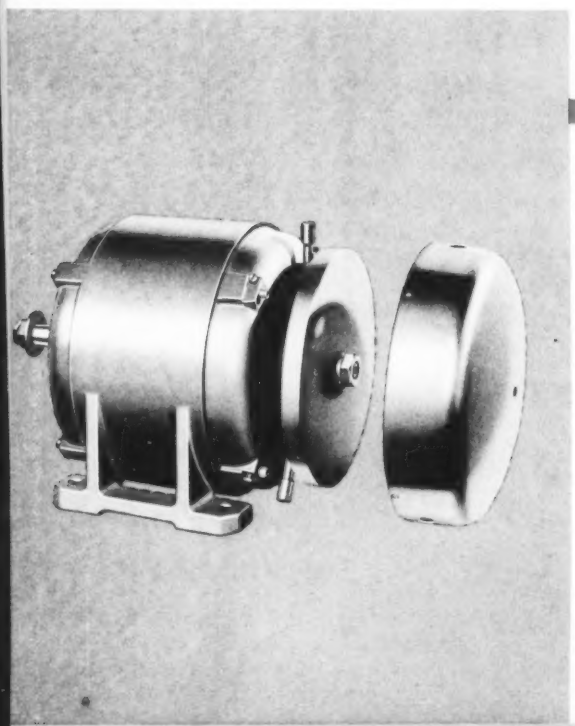
DESIGN FEATURES

1 Motor is totally enclosed, non-ventilated . . . excludes all lint from interior. Both the yoke and bearing housings are cast iron.

2 Stator is double insulated and extra large with heavy construction to meet stress of rapid load oscillation. Stator laminations are welded across back to provide rigid core.

3 Die cast rotor is of largest practical diameter. Maximum inertia in rotor plus proper design of slip makes motor operate at stable speed under pulsating load.

4 Ball bearings are oversized and of double-shielded type. (See illustration upper right.) This allows controlled migration of grease in and out of bearing, yet protects against overgreasing —the greatest cause of bearing trouble. (Optional waste-packed sleeve bearing construction shown at lower right.)



Flywheels Available for Added Inertia (Wk^2)

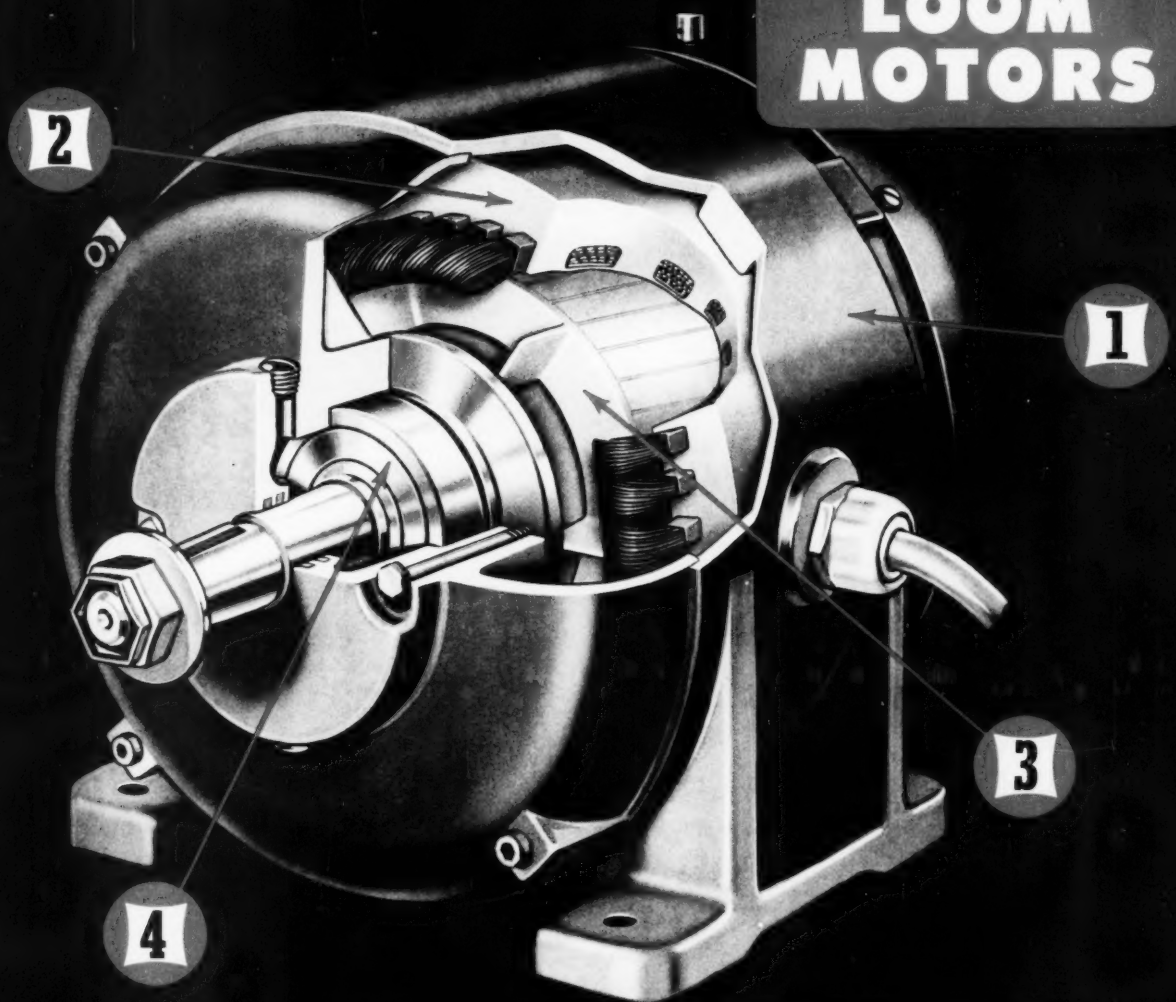
Allis-Chalmers loom motors are available in three inertia categories: more than 1 lb-ft^2, more than 2 lb-ft^2, and more than 3 lb-ft^2. Flywheels are available for two and three pound groups. Both of these flywheel models have the same flywheel cover and same dimensions.

Get information from your nearby Allis-Chalmers office or distributor, or write Allis-Chalmers, Milwaukee 1, Wisconsin, for Bulletin 51B7111B.

A-C ALLIS CHALMERS

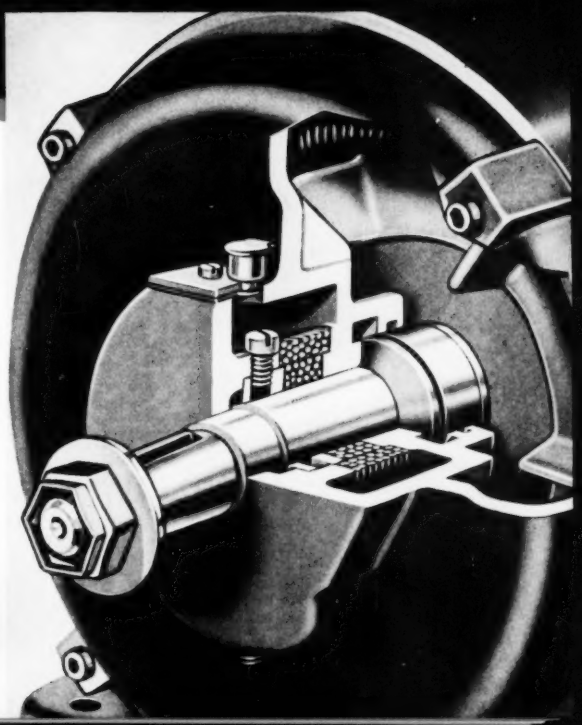
ALLIS-

ALLIS-CHALMERS LOOM MOTORS



Optional — Waste Packed Sleeve Bearing

Wool waste saturated with oil is used to lubricate shaft and bronze sleeve. Slot in upper side of sleeve permits waste to come in direct contact with load carrying area of shaft. Spring-lidded oil cup is provided on top side of bearing to simplify oiling. Waste can be removed easily by removing plate on top of bearing housing. Excess oil drains to outside to prevent damage to windings.

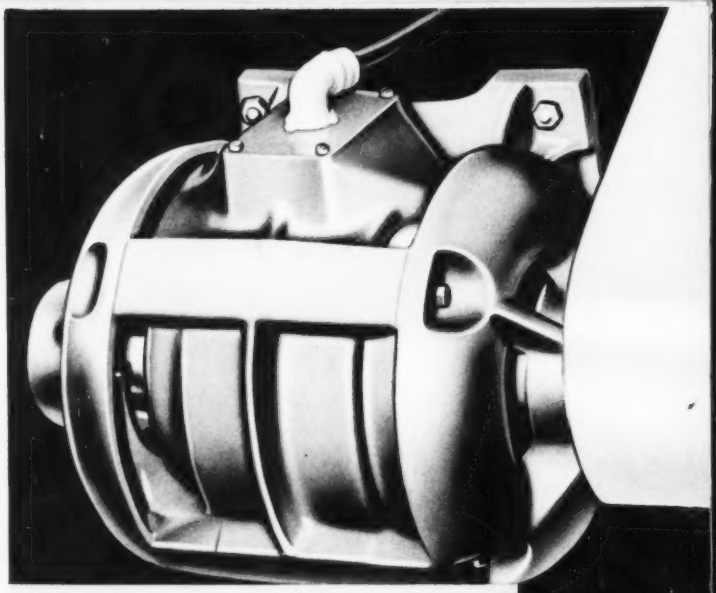


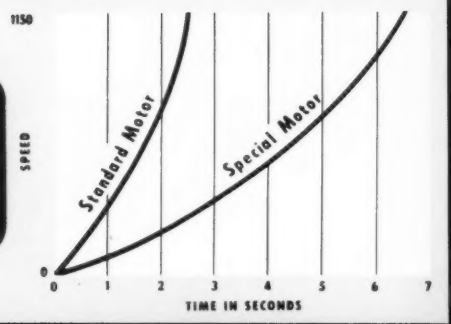
CHALMERS

Slow, Smooth Starts — Without Special Control

Smooth acceleration, fine jogging using Allis-Chalmers roving frame motor, reduces ends down, helps produce uniform roving. No special resistors—no acceleration reducing clutches — no special control required.

These motors take almost three times as long to accelerate as a standard motor. E-v-e-n tension is provided on the roving frame during starting periods. Special conduit box connections permit relatively high torque when required, such as during frame break-in period.





ALLIS-CHALMERS
Roving Frame Drives

ALLIS-CHALMERS
CONTROL

Get Specialized Control Engineered with the Drive

A LINE of full voltage and reduced voltage motor starters is available to meet the requirements of any type of textile motor drive.

Typical is this new loom motor manual starter. Its toggle action is preferable to push button operation for reasons of convenience when mounting starter in high or low positions.

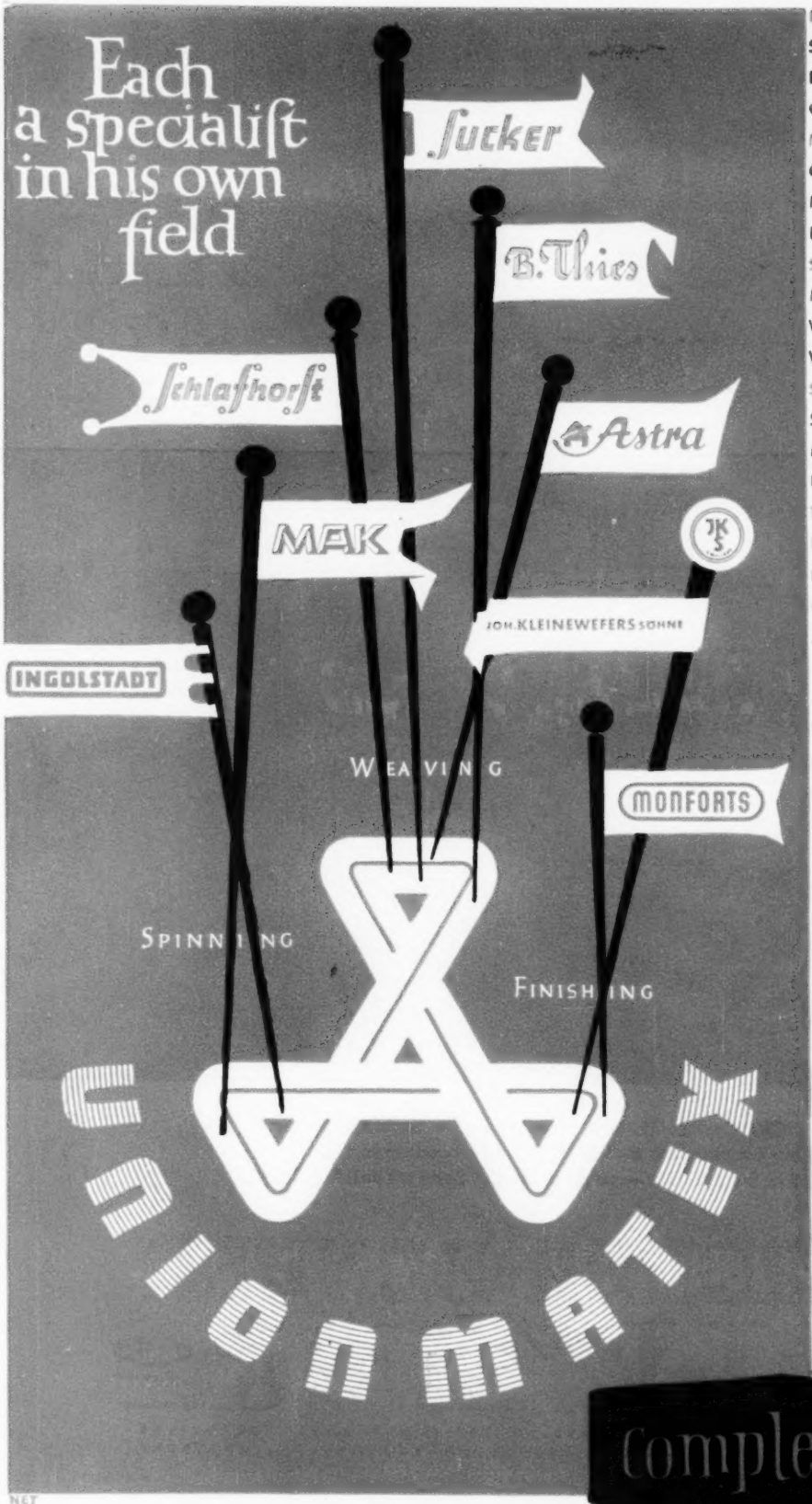
Loom switches and slow speed starters for card drives, and roving frame drives are also available.

Solve your control problems along with your drive problems by calling an Allis-Chalmers Authorized Distributor or District Office. Or write Allis-Chalmers, Milwaukee 1, Wisconsin.

ALLIS-CHALMERS

MILWAUKEE 1, WISCONSIN

A-C ALLIS-CHALMERS



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SPINNING MACHINERY FOR COTTON · WORSTED · CUT RAYON

MAK:
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MACHINES FOR WINDING · WARPING AND SECTIONAL WARPING

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ASTRA:
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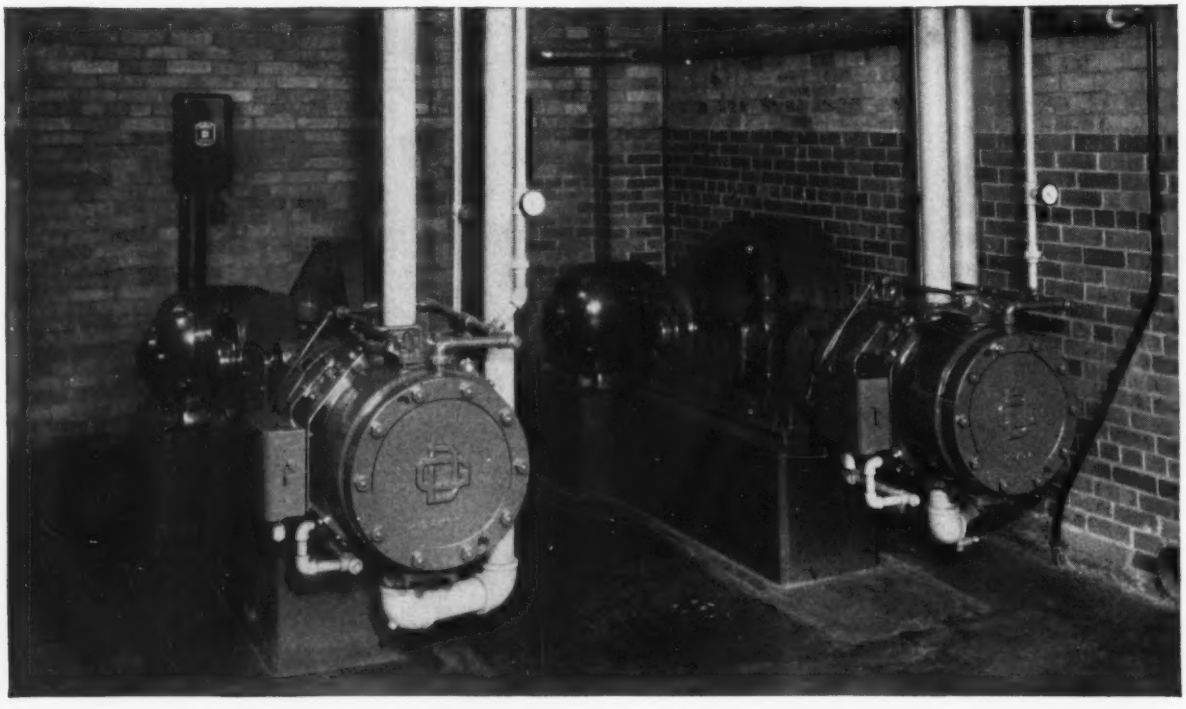
complete plants

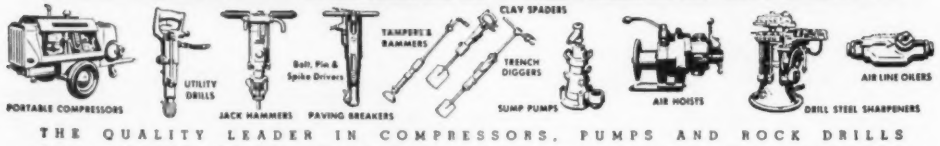
NO OIL
IN THIS AIR!



It's a CRX Carbon Piston Compressor with the famous Gardner-Denver construction that STOPS product contamination. There's no oil in the cylinder — no oil in the air. Send for Bulletin CRC-10.

SINCE 1859

GARDNER-DENVER



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For more information, write direct or use Reader Service post card.

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SPINNING MACHINERY FROM INGOLSTADT THROUGHOUT THE WORLD!

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SPINNING MACHINERY

FOR COTTON, STAPLE FIBRE AND WORSTED

Design and supply of complete spinning plants based on latest experience in spinning and engineering · Conversions

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CRUCIBLE REZISTAL STAINLESS STEELS

SAVE MONEY ALL THROUGH THE

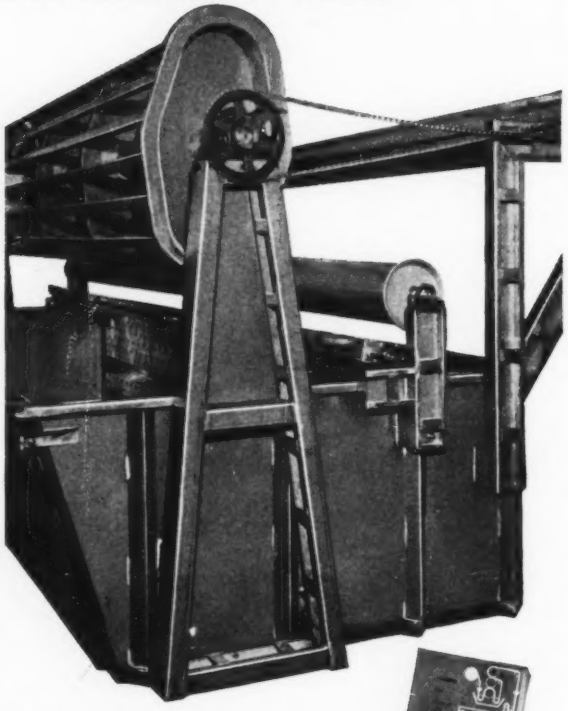
TEXTILE PLANT...

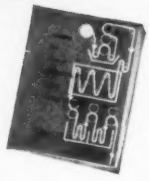
From control instruments to valves and piping . . . from aging to vacuum extracting . . . Crucible Rezistal® stainless steel equipment saves you money.

That's because stainless reduces maintenance and cleaning costs, increases production, and cuts down replacement or repair. And Crucible stainless steels are a perfect choice for operations involving corrosive materials.

It will pay you to check the need for stainless in your textile operations. New stainless machines, parts, hoods, ducts, drip guards or drains should be on your construction program in every case where they will pay their way in reduced operating costs.

In textile applications stainless is no luxury — in fact, it's the least expensive long-run material that money can buy. So let your Crucible representative help you explore new ways to cut costs with stainless.





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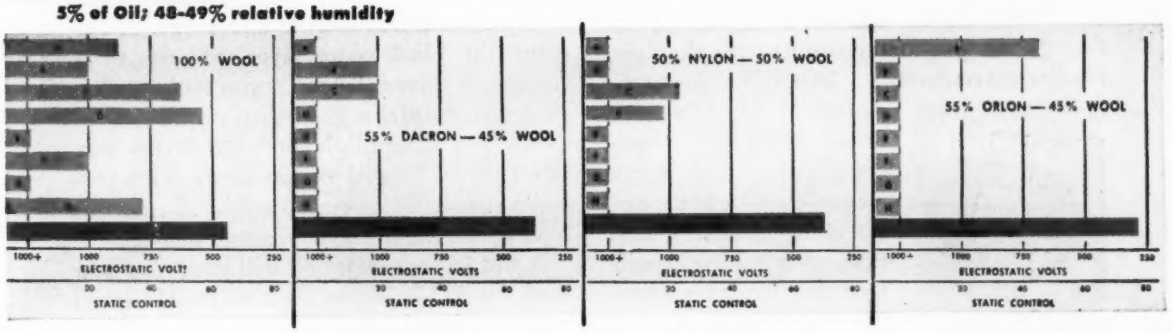
Have You Modernized Your Plant but Forgotten Your Fiber Lubricant?

improved TWITCHELL 7421 OIL meets all the requirements of modern machinery, modern blends, and modern costs with—

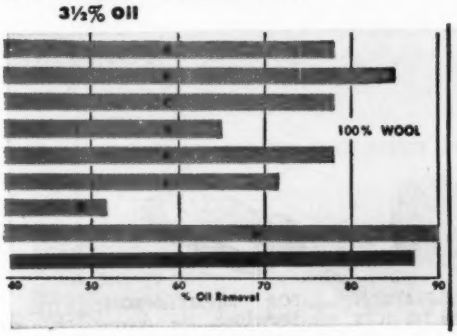
STATIC CONTROL*

5% of Oil; 48-49% relative humidity

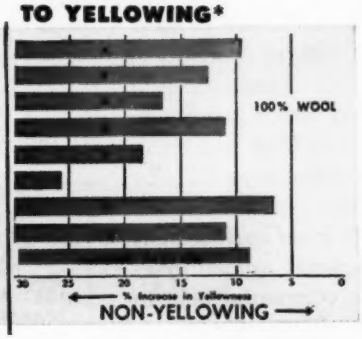


EXCELLENT SCOURABILITY*

3½% oil



RESISTANCE TO YELLOWING*



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So successful with close-pin cradles, this apron is . . .

Now used on all types

Armstrong's new NO-7075 runs clean and smooth, eliminates top-apron slippage

To get best possible yarn on double-apron equipment, many mills are using the apron that gives top spinning results with close-pin cradles—Armstrong's NO-7075 Accotex® Apron. Made of two different synthetic rubber compounds, this apron provides cleaner, smoother inside operation, plus the right surface friction to control the yarn and prevent slippage of the top apron.

The white rubber compound used on the inside of the NO-7075 was developed to meet the conflicting requirements of long-draft, double-apron spinning. It's smooth enough to slip over the pin without jamming or buckling. Yet it also has sufficient friction to grab the drive roll firmly and insure even transfer of power from roll to apron.

What's more, this white inner surface runs exceptionally clean. Special electrolytes added to the white inner compound help to prevent the accumulation of loose fibers.

NO-7075's black outer surface has its own special advantages, too. This compound is made to give good flex life—as well as high resistance to tearing and abrasion. Because the black outer layer provides extra friction, it drives the top apron without slipping and maintains good yarn control.

Between these black and white layers is an interliner of rugged cotton cords. This prevents stretching or curled edges . . . assures long apron life without changes in size.

A test in your own mill will show you how well the NO-7075 performs on double-apron frames. To get samples, call your Armstrong man or write Armstrong Cork Company, Industrial Division, 6408 Dauphin Street, Lancaster, Pennsylvania.

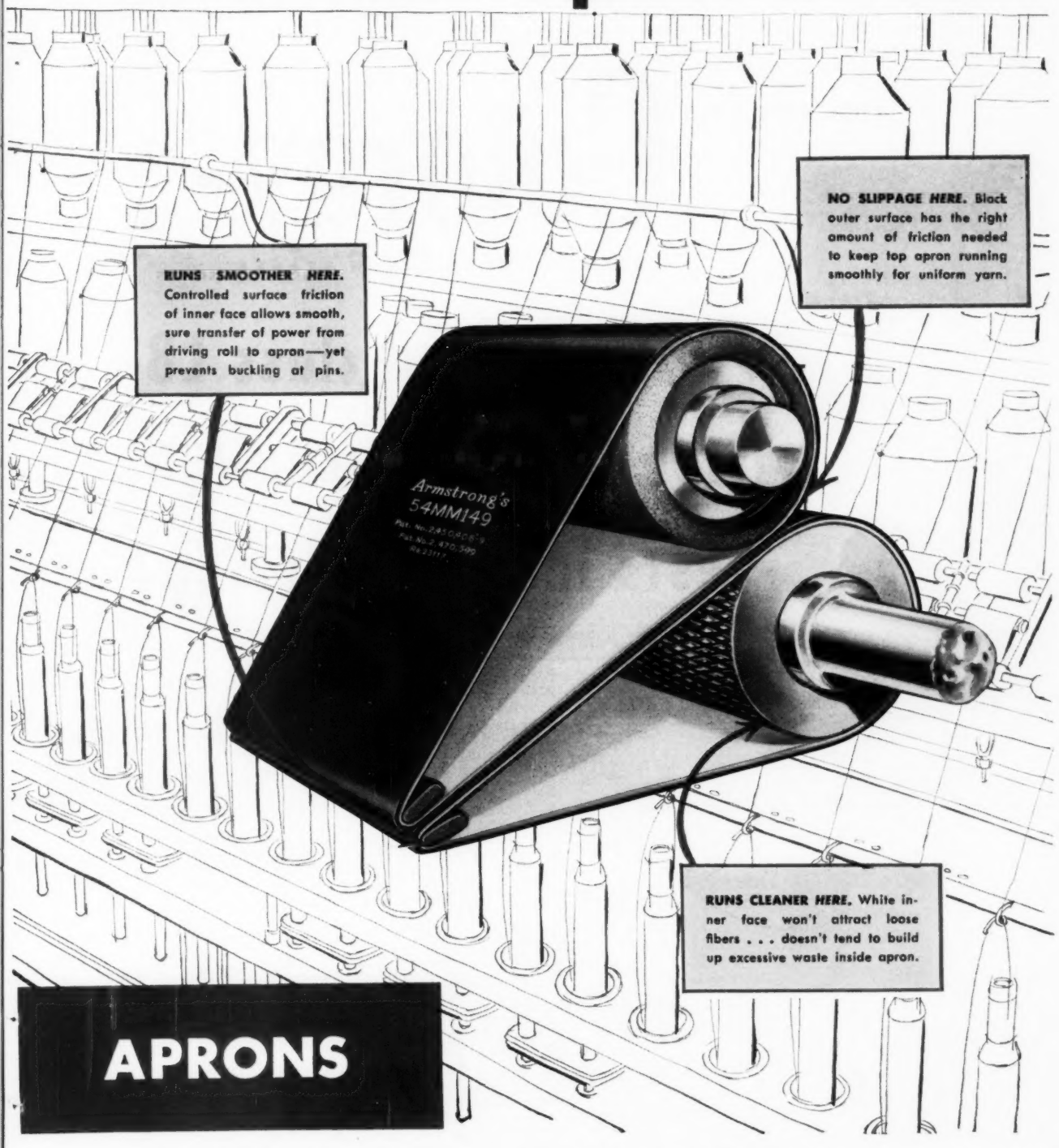
ARMSTRONG OFFERS THESE TOP-QUALITY APRONS

FOR DOUBLE-APRON FRAMES, the NO-7075 apron gives you smooth, clean operation on all types of equipment.

FOR SINGLE-APRON SPINNING, the super-flexible NO-750 insures smooth slip-roll action for uniform yarn.

ARMSTRONG'S ACCOTEX

# of double-apron frames



RUNS SMOOTHER *HERE.* Controlled surface friction of inner face allows smooth, sure transfer of power from driving roll to apron—yet prevents buckling at pins.

NO SLIPPAGE *HERE.* Black outer surface has the right amount of friction needed to keep top apron running smoothly for uniform yarn.

RUNS CLEANER *HERE.* White inner face won't attract loose fibers . . . doesn't tend to build up excessive waste inside apron.

APRONS

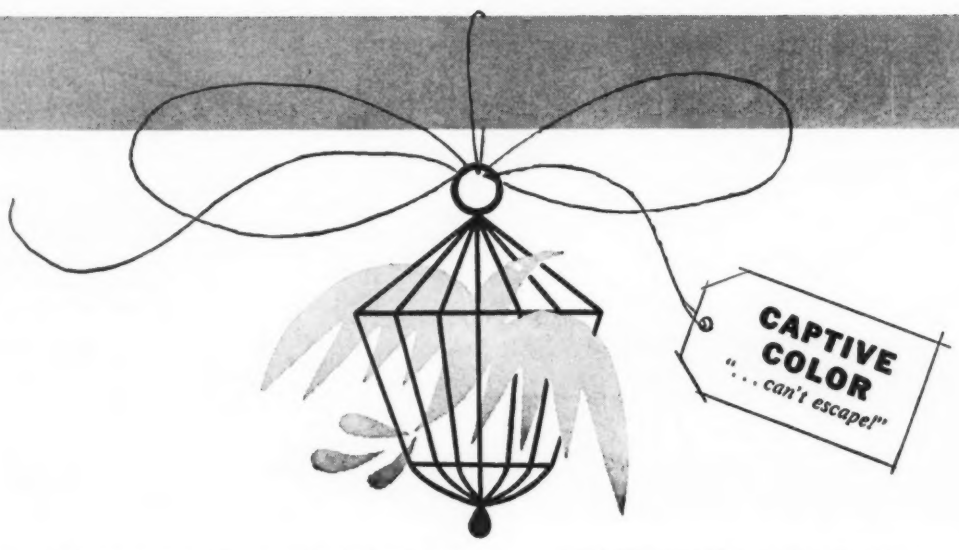
 For more information, write direct or use Reader Service post card.

PROOF OF UNPARALLELED COLORFASTNESS TO

COURTAULDS' **Coloray**™

SOLUTION-DYED RAYON STAPLE

7 colors rated class L8 after 320 hour-sunlight tests in south Florida!



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LIGHT IN A WIDE RANGE OF TEXTILE COLORS!

Bless 'em all—*all* laboratory tests! But with all due respect to their validity, we say there's nothing like the blazing South Florida sun to test conclusively the fastness of color to light. Under that sun Courtaulds' Coloray came through with a performance so spectacular that the tests were *repeated* for absolute confirmation.

Seven of the 13 Coloray colors tested achieved Class L8—after 320 hours of exposure under glass—in sun tests conducted by the South Florida Test Service.

Class L8 is the highest rating on the AATCC system—a degree of light-fastness four times better than Class L6—80 hours! (Heretofore, the rating of Class L6 has been considered by the trade as exceptionally good)*

Five colors made Class L7—160 hours of exposure.

Only one color—light blue—rated Class L6—80 hours.

Even under direct sunlight and wet-dry weathering, 3 colors rated Class L8, six Class L7. And not a single one fell below Class L6!

Here's a new, high standard for fastness to light—not just in one or two colors, but in a broad range of colors. Dramatized by Coloray Black 100% color-fast to light! And Coloray is unexcelled for *all 'round* colorfastness to washing, perspiration, cleaning, and crocking.

You'll find Coloray in almost everything under the sun! Apparel for men, women and children. Draperies. Slip covers. Auto seat covers. Convertible tops. Industrial products. What potential for everything that needs *colorfast* color!

*American Association of Textile Chemists and Colorists.

SOUTH FLORIDA TEST SERVICE REPORT ON COLORAY

COLOR	HOURS OF EXPOSURE (UNDER GLASS)	RATINGS*	HOURS OF EXPOSURE (DIRECT WEATHERING)	RATINGS*
Tan	320	Class L8	320	Class L8
Khaki	320	Class L8	320	Class L8
Black	320	Class L8	320	Class L8
Malachite Green	320	Class L8	160	Class L7
Red	320	Class L8	160	Class L7
Indian Yellow	320	Class L8	160	Class L7
Dark Blue	320	Class L8	160	Class L7
Sulphur Yellow	160	Class L7	160	Class L7
Brown	160	Class L7	160	Class L7
Medium Blue	160	Class L7	80	Class L6
Apple Green	160	Class L7	80	Class L6
Pink	160	Class L7	80	Class L6
Light Blue	80	Class L6	80	Class L6

Two new colors, Turquoise and Slate Grey, were added to the Coloray range while these tests were being conducted

Coloray and white rayon staple are produced in Courtaulds' new plant at LeMoyne, Alabama. Fifteen basic colors are available in these deniers and staple lengths: 1½ denier, 1-9/16" staple, 3 denier—2" staple.

For further information, write Fabric Development Dep't.

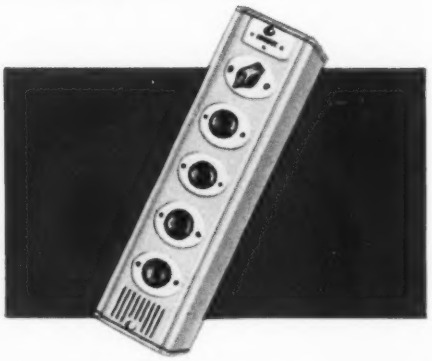
COURTAULDS *first name in man-made fibers, first name in solution-dyeing*

(Alabama), Inc., 600 FIFTH AVENUE, New York 20, N. Y. • GREENSBORO, N. C. • LE MOYNE, Ala.

DIAL THE SPEED—CONTROL THE PROCESS

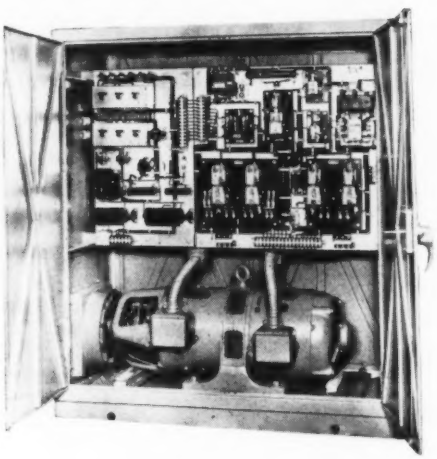
with a Performance Rated® Century SELECTIVE SPEED DRIVE

- **Offers automatic control integrated with your process.**
- **Covers a wide speed range—forward or reverse.**
- **Starts, stops—fast or slow.**
- **Allows forward or reverse jogs.**
- **Controls one or more motors.**



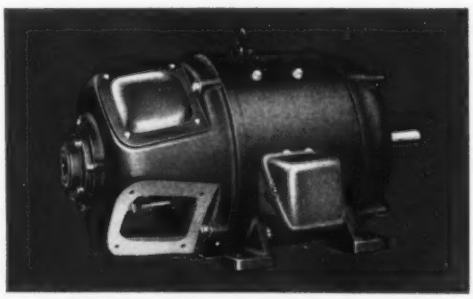
With a Century Performance Rated Selective Speed Drive, you can often integrate speed changes to cycle automatically as the process requirements dictate.

- You can automatically regulate metal cutting for optimum cutting speeds.
- Make the speed change automatically sensitive to changing temperature or pressure.
- Make the speed change automatically sensitive to changing diameter of a feed roll.
- Make the speed change automatically sensitive to the viscosity of a mix.
- You can use many different kinds of control devices in the control circuit to change speeds ... to jog ... to apply dynamic braking, etc.



You're welcome to full information on your specific drive problem. Call your nearest Century District Sales Office or Century Authorized Distributor, or write direct. See telephone listings.

Century makes A. C. and D. C. motors 1/8 to 400 H. P.



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CLARK'S L.P.-GAS CARLOADER*

reduces engine maintenance, eliminates obnoxious exhaust fumes

1. Greatly reduces engine maintenance:

——eliminates unburned carbon deposits and crankcase dilution.

——eliminates fuel pump and complicated carburetor adjustments.

2. Eliminates obnoxious exhaust fumes:

——L.P.-Gas provides almost perfect combustion, excellent for indoor operations.

3. Provides safe, efficient operation:

——vacuum ignition switch is interlocked with fuel line and manifold, impossible to spill fuel or load-up engine.

——high compression head (8.5 to 1) gives maximum economy and power from high octane L.P. Gas.

——quickly demountable tank takes 3 minutes to change.

——Stellite valves and seats prevent burning from high flame temperature of L.P. Gas.

*4000 lb. capacity, available with standard shift, Hydratork or Dynatork.

Now you can have the advantages of liquified petroleum gas-powered (butane, propane) materials handling, with complete safety. The Clark L.P.G. Carloader is the first lift truck to receive the all-important listing of Underwriters' Laboratories. Field and factory tested for two years, Clark's unit is specifically designed and metered for fork truck operation. For details, call your local Clark dealer, listed under "Trucks, Industrial" in the Yellow Pages. Or send the coupon for specifications.

CLARK EQUIPMENT

Industrial Truck Division
CLARK EQUIPMENT COMPANY
Battle Creek 27, Michigan

☐ Send details on *LPG* truck

Name_____
Firm_____
Address_____
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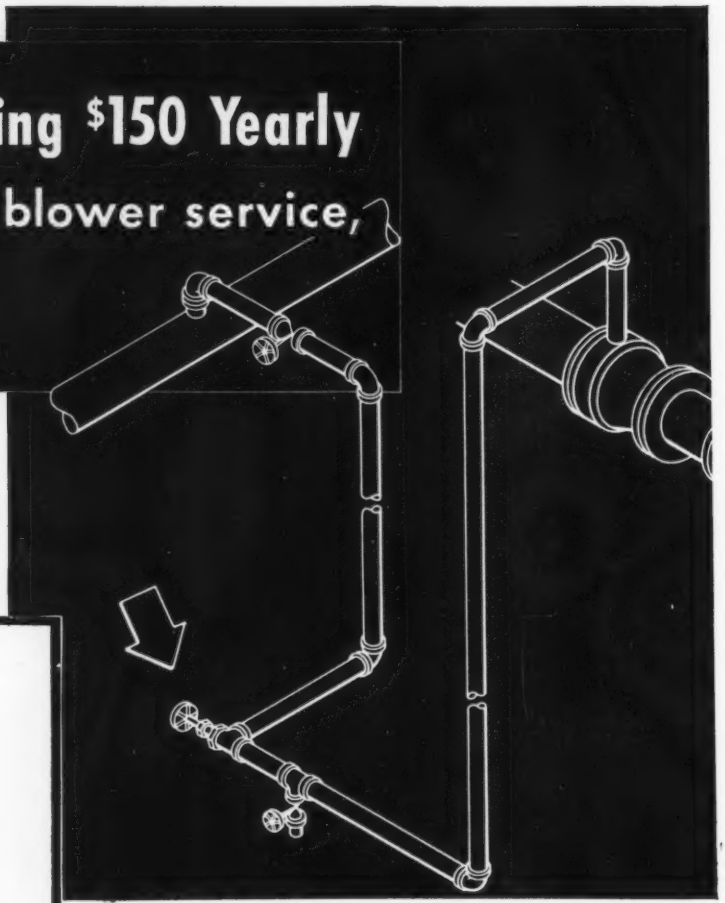
Single Valve Saving $150 Yearly

...on severe ash blower service, for example...



The Installation

At City Light & Power Company, Washington, Indiana—with Crane bronze angle valve in 2-inch steam line to boiler ash blower manifold. Working pressure: 300 psi, 525 degrees F.

Valve Service Ratings

SUITABILITY:
Perfect match for needs

FEATURES:
Crane Plug Type Disc

MAINTENANCE COST:
One stem replaced in 3 years

SERVICE LIFE:
Already 12x former valves

OPERATING RESULTS:
Over $400 saved to date

AVAILABILITY:
Crane catalog item—No. 384P

The Valve

Crane plug-type disc and seat design make a most effective seating combination for tough steam service. Highly resistant to damage by foreign matter, wire-drawing, erosion, cutting, galling, etc. The wide tapered disc allows fine, accurate throttling. These rugged bronze valves come in globe and angle patterns; see your Crane Catalog or Crane Representative.

The Case History

Valves formerly had to be replaced every 8 to 12 weeks, their cost alone exceeding $150 yearly. It's a tough spot even for a good valve.

The valve's location in the steam line is below the boiler water level. Each operating cycle exposes it to a long leg of condensate, with an abrupt change to hot steam direct from the boiler header. On closure, the valve is again subject to cooling, and that's the cycle about 8 times daily.

Under those conditions, this Crane No. 384P Bronze Plug Type Disc Angle Valve put a stop to former replacement cost, saving more than $400 in 3 years since installed. Still the valve remains tight, dependable, and fully fit for service. That's the result of choosing the right valve—the choice assured by Crane quality and the completeness of the Crane line.

THE BETTER QUALITY...BIGGER VALUE LINE...IN BRASS, STEEL, IRON

CRANE VALVES

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VALVES • FITTINGS • PIPE • PLUMBING • HEATING

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HUNTER *equipment*

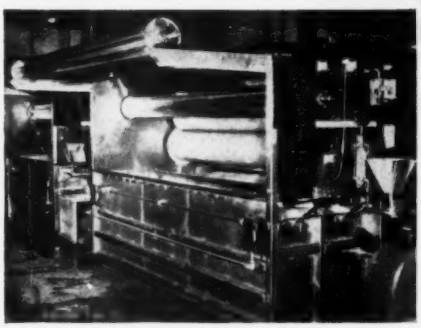
safeguards quality

at STRONG-HEWAT

Many of the country's discriminating clothing manufacturers choose distinctive Strong-Hewat woolens and worsteds to enhance the beauty and quality of their fine creations.
The Strong-Hewat Company safeguards its excellent reputation for quality production by the use of superior methods and equipment.

It is only natural, therefore, that in the Strong-Hewat plant . . . and in other fine mills throughout the world . . . you'll find Hunter "plus production" equipment.

Hunter machines are used to finish a wide variety of ***woolens, worsteds, synthetics, blends*** and ***cottons.***



The Hunter Model M Cloth Washer is the finest machine available for batch washing of woolen and worsted piece goods. This stainless steel washer, with its pneumatic squeeze rolls and sliding suds box, is another Hunter "plus production" unit.

plus production

- efficient operation of modern equipment
- less down time of equipment
- quick, easy repair . . . rapid parts delivery

JAMES HUNTER

MACHINE COMPANY

NORTH ADAMS, MASSACHUSETTS FOUNDED 1847

BUILT BY HUNTER
...IT'S DEPENDABLE

JAMES HUNTER MACHINE CO. Hunter NORTH ADAMS, MASS.

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no more shrinkage headaches

CET

FOOLPROOF SHRINK-PROOFING of RAYON or COTTON for the LIFE of the FABRIC

Now you can easily, effectively SHRINK-PROOF RAYON or COTTON for the life of the fabric with CET

Complete stabilization of cellulosic fabrics — fabrics containing 50% or more viscose rayon or cotton or all cotton — even through an indefinite number of commercial launderings, with the assurance of true shrink-proofing for the life of the fabric, is now a reality with CET.

This revolutionary development of the Onyx laboratories makes possible for the first time absolute shrinkage control without changing the hand of the fabric and with little or no loss in tensile strength. (Yes, even on all-cotton fabrics.)

The excellent stabilizing action of CET is enhanced by other unique and distinct advantages. A water soluble compound, CET will not resinify and thus has little or no embrittling or stiffening effects ordinarily accompanying resin treatments; CET is characterized by simple easy formulation and application, requires no adjustments or control of pH; compatible with most hand-modifying finishes, CET permits the production of any required hand by addition of such finishes.

CET exhibits vastly improved chlorine resistance when compared with conventional types of stabilizing resins, and finally, CET is applied on conventional finishing equipment.

Shrinkage control of cellulosic fabrics is no longer a problem with CET. In lot after lot, day after day, without constant adjustment, you get uniformly excellent shrink-proofing with unchanged hand and no loss in tensile strength. *Send for samples and data today.*

get ready, get CET, and go

ONYX OIL & CHEMICAL COMPANY

TEXTILE DIVISION

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. . . and in **Harper's Bazaar**
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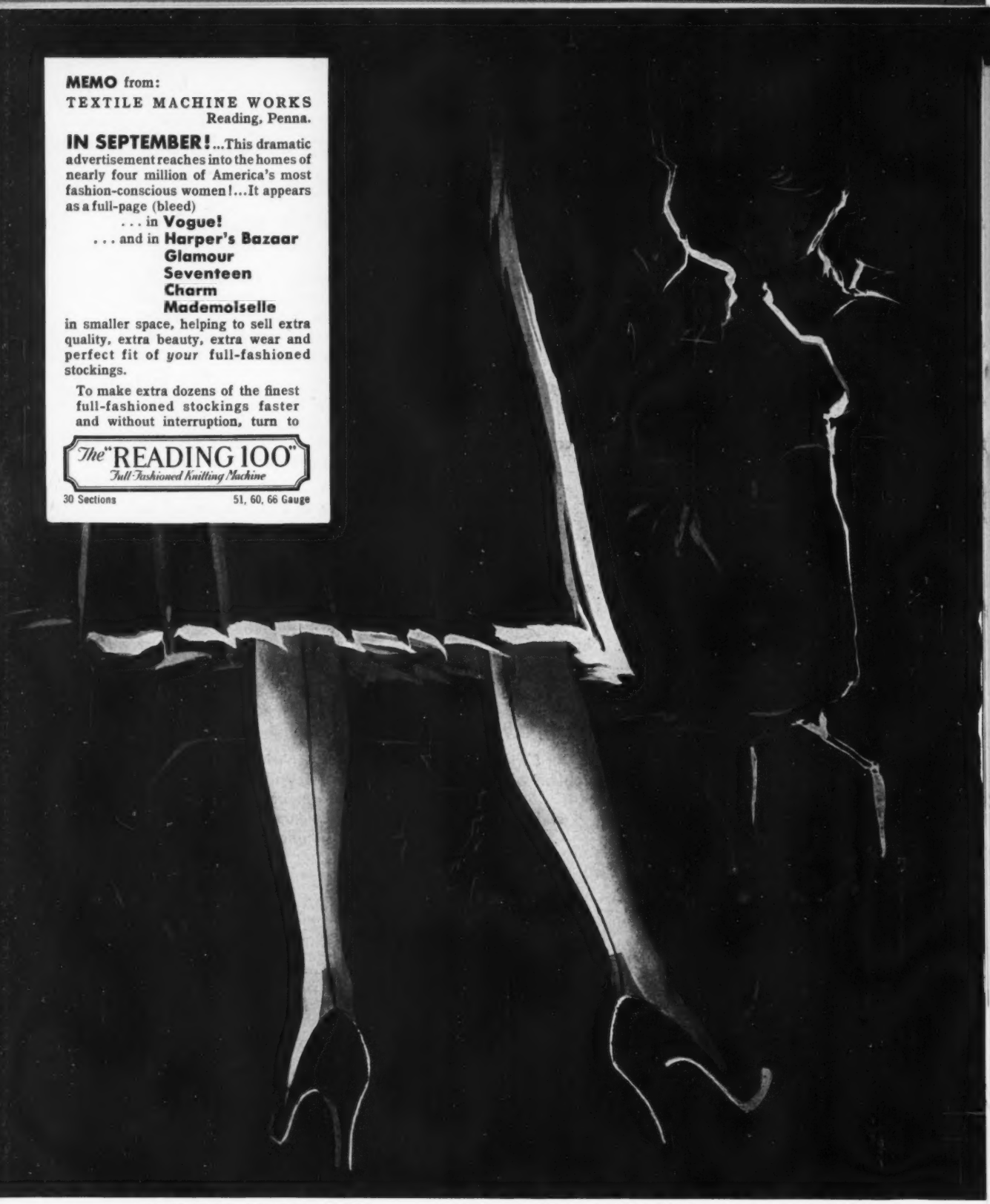

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TEXTILE WORLD
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Consider These 10 Points In Applying WAGE INCENTIVES

1. **Select the first operation**
2. **Find the best way to do it**
3. **Explain new setups**
4. **Train operators in improved methods**
5. **Study effect of improvements**
6. **Construct the rate**
7. **Sell the rate**
8. **Follow up performance**
9. **Publicize performance**
10. **Control performance**

CONVERTING FROM TIME WORK to incentive pay requires more skill than revising existing piece rates. Where departments are not now on piece rates, the establishment of a wage-incentive plan has dangers because of inequities in the resulting wage scales. As in all phases of wage-incentive application, the men directing the work must have competence, integrity, and sales personality.

If wage incentives are not to be a measure of existing conditions, methods and tools must first be checked and changes made where advisable. Then you can set out to measure the improved operation.

Methods advance, and setups become obsolete. Every setup, every operation, and every plan should be audited every five years.

While the emphasis of the following 10 points has been placed on sewing-room applications, the same principles hold true for most textile-mill incentives. The 10 points to consider in applying a wage-incentive scheme are—

1. Select the Operation

In applying wage incentives, the installation engineer is tempted to start at the front end of the shop and work his way to the back, one operation at a time. He thinks that as production is increased on Operation No. 1 as a result of his efforts, he creates the necessary backlog of work for the anticipated increase in production on Operation No. 2.

It is more important to select as the first operation one where the attitude of the operators is cooperative and where the results will get the program off to a good start.

Space limitations often leave us little choice except to start at one end or the other, but the above factors should be considered.

2. Find the Best Way To Do It

After we decide where we wish to start, we should turn our attention to improving the operation. This is best done by asking the time-honored basic questions of industrial engineering:

1. Is the operation necessary?
2. If so, is it being done at the best point in the process of manufacture?
3. Can it be combined to advantage?
4. Should it be split up?
5. Can it be performed better with faster or different tools or machines?
6. Can gauges, guides, knives, or similar gadgets be devised to improve the operation?
7. Can the work place, work table, pickup and disposal racks, or facilities be redesigned to advantage?
8. Can the motion path be simplified?

Answers to these questions frequently suggest themselves to the engineer from past experience. The combination of industry specialization and breadth of experience comes into play at this stage.

Sometimes the answers are the result of on-the-spot analysis. At other times, a little experimentation such as a pilot setup is advisable to test an idea.

The best setups are generally evolved from a combination of past

Adapted from a paper presented by Kurt Salmon, president, Kurt Salmon Associates, Inc., at the 1954 annual meeting of the Underwear Institute.

experience, on-the-spot observation, and a little experimentation. To rely on experience alone is to become stagnant; to brush experience aside and rely exclusively on on-the-spot analysis or experimentation is to say that the ideas of a few are superior to the ideas of many.

3. Explain New Setups

Where a new setup was decided by experimentation, at least one operator will have participated. An introduction of the new method is simplified in such cases because one or more of the group will have a justifiable feeling of participation.

Where the setup is the result of experience elsewhere and is evolved without the assistance of an operator, an important job of proper introduction lies ahead.

First of all, the operators involved should be called together; and the explanations that had been made at the outset of the program about its reasons and purposes should be repeated. Assurances that employees will be protected against financial loss while they become acquainted with the new setup and methods are essential to success. The people should also be told that they will receive thorough instruction and assistance.

The operators should be encouraged not to worry if their production slips back a little when they first try out the new method. This condition can be explained by relating similar situations, such as learning to write one's name with every other letter left out.

Finally, the operators should be induced to ask questions; and their questions should be answered as fully as possible. The group should not be dismissed until a promise to give the new setup a fair trial has been received from all.

4. Teach Improved Methods

There are several important facets to training operators in new methods. One is that there should be no interval of time between the introductory remarks and the actual training. There should be no time for doubts or negative attitudes to occur before we have the opportunity to demonstrate the positive advantages of the new method.

Another point involves the supervisors and trainers, if there are separate trainers in the plant. In the anxiety to get on with the job and convey the new method and setup to the operators, it is easy to overlook the forelady trainers. They should be taught the method first and be thoroughly sold on it. There is no better way to get their cooperation than to invite and use their help in working out the method in the beginning.

The time-tested formula of "tell-show-test" applies to retraining as well as to initial training of operators. The important thing is to stay with it and keep faulty habits or motions from creeping into the method. These motions may seem easy to the operator now but may retard the ultimate goal.

5. Study Improvement's Effect

The effect of the improved method is not always one of immediate gain. Sometimes the motion path is radically changed or the work new to the operator. Besides learning how to do it, the operators need time to reach their former speed and skill.

Then there is a psychological effect —fear, greed, or a combination of both—that may result in a tendency to "soldier" on the job. In order to combat soldiering that tries to influence the production rate to be established, we use various stratagems.

First of these is the assurance that employees need not hold back. Holding back will have no effect on the ultimate rate but will merely delay it. They will be deprived of incentive earnings over and above their current hourly rate.

Then there are incentives for gradual progress or incentives for the successful attainment of interim tasks.

If the operators still persist in soldiering in spite of these and other stratagems, we have to resort to various neutralizing means. Some of these means are: timestudies that screen out the deliberate excess motions, disciplinary measures, and moving a new operator into the department to break down the resistance.

There are two ideas that cannot be beaten as antidotes for soldiering: (1) a good history of fair treatment that has built up confidence in the minds of the employees that the company will install fair standards and not change them unless methods or conditions are changed; and (2) proving the job with operators working under controlled conditions before introducing the system generally.

6. Construct the Rate

If timestudies with fair allowances are the basis of production standards and if these timestudies show effort ratings of 100% or more, it is easier to prove the adequacy of standards and to make them stick.

The first of many desirable rules in rate construction is to have conditions right and the operators trained well enough that grades or effort ratings can be in the neighborhood of 100% when we study them. The next rule is to take an ample number of readings to obtain meaningful and defensible averages. The third rule is to break studies down into logical elements to facilitate analysis.

The averages obtained on several studies should be compared, element by element, before the final rate is constructed. Standard data, if available, can be used either instead of or as a check on timestudies.

7. Sell the Rate

Before attempting to sell a standard to the workers, sell it to the supervisors and trainers. They must thoroughly understand it and approve of it, for they can undo days of the engineer's missionary work with a look or a shrug of the shoulder. You can't take too much time or too many pains in briefing and selling supervisors.

Too many wage-incentive applications stop short of the point of selling the worker. Much industrial strife is the result of this omission. People who think that a new rate should be announced by printing it on the coupon tickets, nailing it to the bulletin board, or handing it to the foreman should not be surprised if they have poor employee relations.

A rate change reflecting a new method, no matter how fair or adequate, constitutes new conditions of work and pay. Employees are individuals who have chosen their place of work out of their own free will. It is intelligent as well as courteous to call them together to explain or sell these new conditions to them.

The task is greatly simplified if one or more operators in the group are already producing at or above the incentive rate about to be announced. It is probably too soon to try to sell the rate if too many of them are too far under it.

In selling standards, the reasons for the change should be repeated and the short time that it has been in effect stressed. Facts and figures should be available. Whatever happens, the conference should not be broken off until a promise has been secured from everyone to give the standard a fair trial.

During such conferences, the operators will occasionally bring to light complaints or conditions that need correction. The trouble may be the

work supply, machine trouble, or similar difficulties. If these same operators have expressed their doubts as to their ability to meet the production standard, the operators have a chance to save face. You might say, "We could not expect you to make production if conditions are not right; we will see that they are corrected." Action, not talk, is the important thing; and this brings us to the most important part of the wage-incentive application—the follow-up of performance.

8. Follow Up Performance

While it was important to follow up promptly after the introductory talk before training and start the training itself, it is imperative that follow-up of performance should begin immediately after the standards have been announced or sold. The engineer charged with this responsibility should accompany the group back to the machines and stay there.

He should check performance by the hour or other work periods and by the bundle. He should note their progress and compliment the people. He should figure out their earnings and point it out when they are beginning to exceed previous levels. He should straighten out troubles and smooth the path to success.

The follow-up idea is often overlooked in the successful application of wage incentives. If the operators were left on average until they earned as much or more under the new methods and rates, they would have a negative incentive to produce. Some would get there sooner than others. We might be discriminating in favor of deliberate slackers if we took the good producers off average before we removed the average from the slower operators.

We might penalize some operators if they were placed on the new piece rate at the time of its announcement. We might find ourselves delaying the announcements because of this possibility and the anticipated dissatisfaction on the part of some operators.

It is often wise to introduce a new rate with a temporary and gradually diminishing progress bonus. This bonus compensates for the operators that are still unaccustomed to the new operation or method. It should be fixed in such a manner that the poorer operators stand to lose nothing and the better ones stand to gain over their previous earnings at average during the first week.

For example, pay a bonus of 15% the first week and reduce it by 5% every week. In the fourth week the operators would be on the unsupplemented piece rate or wage-incentive standard.

The important thing is to make the first step high enough to achieve a dual purpose. The poorer operator must be supplemented and protected against a loss, and the better operators must be provided with the opportunity for extra earnings.

An operator will put forth a more sustained effort in the face of a bonus rate. Operators who had been close to standard will, through such extra effort, usually go over the top and prove the standard through their own performance.

The few extra dollars spent over a few weeks are much less of an expenditure than the loss of production and loss of employee goodwill accompanying an inadequately sold standard.

9. Publicize Performance

One of the other managerial tools used to make wage-incentive applications effective is the publicizing of performance.

Although the follow-up engineer has orally publicized the performance, it would not be economical for the engineer to stay with the group until every last operator has met or exceeded the standard. When he leaves the group and turns his attention to other groups, there is often a need for further aids to insure continued progress of some operations and to avoid backsliding of others.

This problem can frequently be solved by publicizing the performance of the employees. Several ways of doing this are available, and all are effective if properly used:

Post daily and/or weekly performance percentages on a suitably lined blackboard or posting sheets.

Post the individual employee's performance on a card mounted on her machine, possibly against a graph showing normal or expected progress.

Sew stars to uniforms of employees who run consistently at standard or better.

These procedures aim to tell individuals how they are doing, show them how others are doing, and give recognition and prestige.

Once a department has settled down and methods and performances have stabilized, the incentive aids can be dispensed with to save time. Operators who have performed month after month at certain earning levels are not likely to slip back. In the initial weeks or months of a wage-incentive application, these means of publicizing performance can prove very helpful in attaining top performance from the greatest number of people in the shortest possible time.

To have visible boards that are inspected frequently by the plant superintendent tends to keep supervisors as well as operators on their toes.

10. Control Performance

There are several important features that distinguish a sound wage-incentive plan from a mere piece-rate system. Wage-incentive rates, if properly constructed, have a sounder base. Incentive plans enable us to measure an operator's performance against standard.

But we can neutralize the performance gains by transfers and by delay allowances for waiting for work, machine delays, and extra handling.

Not to recognize these things means lower operator earnings or lower production standards; for somebody is going to have to pay for these things. It means that we bury what often amounts to avoidable delays under the general classification of lower earnings or make-up, or both.

To control our costs, we must know our costs. All excess cost items other than regular production at standard should be segregated from the operators' normal earnings through a payroll system designed to facilitate this.

The items themselves should be budgeted and summarized weekly, and the actual amounts compared with the budgeted amounts. We can then control our costs by directing supervisors' attention to the various items of excess costs in order of their importance.

Some mills use a payroll-summary form that shows the actual cost of weekly direct labor compared with the budget cost. Such items as waiting time, machine delay, and learners' make-up pay are listed.

A Kardex record of the individual operator's performance can be charted either by the personnel department or by the payroll department. This record shows trends of operator performance over a period of time and other information. The record serves as a control instrument and is a valuable personnel record.

These charts can be overdone and can be underdone. A wage-incentive plan should not be so cumbersome that it "uses too much of the steam to blow the whistle." A set of rates based on guesses and nailed to the bulletin board is a 19th Century plan in what aspires to be a 20th Century factory. There can be no ideal solution fitting every plant. But somewhere between these two extremes there is the right plan for every given situation.

Nine Causes of SHUTTLE WEAR—

▶ Most shuttle wear comes from neglect of lay parts and the misalignment that follows. This wear can be greatly reduced by following good loomfixing practices.

SHUTTLES OPERATE under many conditions, and each condition constantly changes during the life of a shuttle. These changes, no matter how slight, affect shuttle life.

This type of shuttle wear is normal and is therefore unavoidable. This normal wear starts when the binders, pickers, checkstraps, box plates, leathers, etc. pass from a new condition to a sufficiently worn condition to require replacement.

Based on a talk given by J. M. Tuten, Draper Corp., at a recent meeting of the Southern Textile Association at Ware Shoals, S. C.

Why Do Shuttles Wear?

The more-common causes of shuttle wear are perhaps the most serious. They can be divided into two broad classes:

1. Internal wear
2. External wear

The internal wear is caused by allowing the hardware in the shuttle to become loose. This condition usually occurs when there is no system for periodically checking shuttle screws. A shuttle spring or eye that is allowed to run loose for even a short period of time usually makes the shuttle unfit for further satisfactory service.

To correct this problem, establish a system to check each shuttle for loose hardware at specific intervals.

External wear is more serious and is generally caused by crooked shuttle flight. It is also caused when the shuttle meets some object in its flight. Crooked shuttle flight can be the result of a number of things, such as:

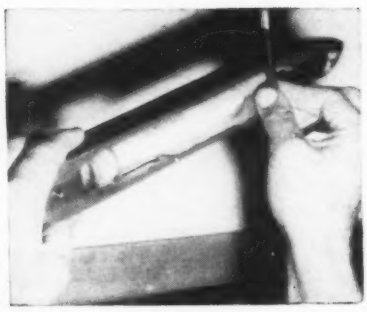
1. An improperly positioned front box plate
2. Back box plate out of alignment with the reed
3. Reed bowed, or out of square
4. Sharp dents in the reed. (To check a sharp reed, rub your thumbnail across the reed; if it is marked, the reed is sharp enough to wear the shuttle unnecessarily.)
5. Lay warped
6. Offset shuttles or pickers
7. Improperly set picker
8. Shuttle wider than the lay section
9. Too much picker-stick power

Correct Shuttle Wear This Way

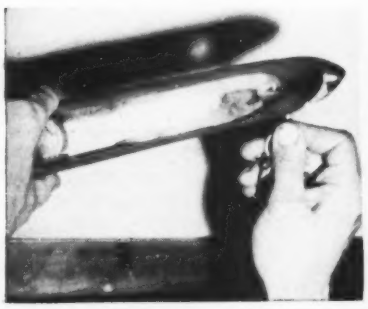
All these faults can be corrected with a little effort. Following the instructions furnished by the loom man-

Put New Shuttles in Right

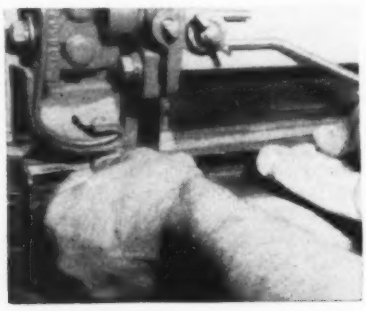
GAUGED SHUTTLES assure positive boxing in both ends of the loom.



TRUED GRIPS let the filling pass off the bobbin evenly.



EQUALIZED PAD TENSION means fewer filling breaks at knots.



ALIGNED REED prevents wearing out shuttles at the back surface.

▶ If you are using too many shuttles, check your methods for putting in new shuttles. Perhaps your shuttles wear out because they're put in wrong. This checklist will cut your shuttle costs.

By W. R. CALLAWAY

TO OBTAIN GOOD RESULTS in weaving efficiency and cloth quality, new shuttles must be put in the loom correctly. Then, for the first few days after installation, the shuttles must be checked periodically to be sure they aren't being damaged.

An incorrect installation of new shuttles is indicated by shuttles scarred from a badly aligned lay. Filling also breaks excessively, and the result is usually second-quality cloth containing broken picks.

The accompanying checklist is for S-6 looms, but with minor changes it can be used just as effectively on other Crompton & Knowles looms. All bobbin-changing looms will be particularly improved.

Fabrics woven on Draper looms will

and How To Remedy Them

ufacturer to show proper settings for shuttle boxes and reeds in relation to back box plates will eliminate most unnecessary wear.

The shuttle box is the only thing that can influence the shuttle and its relation to the reed during shuttle flight. Any misalignment given the shuttle as it leaves the shuttle box is greatly magnified by the time it reaches the opposite box.

Keep all box plates covered with leather to protect the shuttle; and set back box plates exactly in line with each other with a long straightedge.

Avoid excessive heel spring; use just enough spring to prevent excessive parallel-shoe kick back. If too much heel spring is used, the checkstrap must be adjusted tighter than necessary; and shorter checkstrap life results.

Use sufficient picker-stick power at all times to guarantee the arrival of the shuttle ahead of the shuttle feeler before a filling transfer. If the shuttle is late, the shuttle will be marked. This marking is evidenced by rapid chewing up of the shuttle as it enters the left-hand box.

Since the shuttle rises when it boxes, set the Stafford thread cutter high in the thread-cutter hole in the shuttle rather than low. A low setting will often chip or mark the bottom of the hole. This interference will often cause the knife to miss the filling and may result in jerk-backs.

Here Are Some Do's and Don'ts

Check lays for levelness with a long lay gauge and the lay-height gauge. Don't ever guess at lay settings. Correct any lay settings that don't conform to the gauges.

Check lays for levelness with a long straightedge. A high lay cuts seriously into the life of a shuttle. A long straightedge will also show such things as twisted lays resulting from untrue lay swords.

Keep the bottom warp shed no higher than $\frac{1}{8}$ in. off the race plate when the lay is at the back-center position. A high bottom shed will reduce shuttle life considerably.

Two loomfixing practices that will cut into shuttle life are:

1. Scraping the backs of new shuttles. The protective coating on new shuttles is very durable and helps protect shuttles until it wears off. Scraping the coating off the back of a new shuttle reduces the life of the shuttle by 8 to 10 days.

2. Putting in new shuttles without first aligning the lays. If a lay isn't aligned properly when a new shuttle is put in a loom, the new shuttle will soon be in the same condition as the old one.

To REDUCE SHUTTLE WEAR

A CHECKLIST FOR LONGER SHUTTLE LIFE

Check the Shuttle

- ☐ 1. Use a shuttle gauge to match the shuttles so that they are the same size. Then they will box correctly in the magazine end of the loom.
- ☐ 2. Align the bobbin grips to hold the bobbins straight and level. Tighten all screws.
- ☐ 3. Polish the shuttle eye with crocus cloth. Be sure the eye is the correct kind for the filling being run. Adjust the tension on the eye pads equally, and set the tension for the filling.
- ☐ 4. Be sure the fur is the correct grade for the filling and in good condition. Trim the fur.

Check the Loom

- ☐ 1. Align, time, and divide the shuttle box on the drop-box end of the loom. Align the box plate on the magazine end of the loom. Align the reed at the bottom and top on both ends of the lay.
- ☐ 2. Position the shuttles in the shuttle boxes. Set the box front and binder on the magazine end so that the box front will not be more than $\frac{1}{8}$ in. from the outside shuttle wall at the mouth of the box. At the same time, set the binder and box front so that the point of the shuttle will be in the center of the slot for the picker in the lay end.
- ☐ 3. Set the picker-stick stop so that, with the shuttle all the way in the shuttle box, not more than two rings of the bobbin in the shuttle show beyond the division block of the magazine.
- ☐ 4. Set the box top 1/32 in. over the back wall of the shuttle.
- ☐ 5. Parallel the pickers at the back and front on both ends of the loom.
- ☐ 6. Examine both picker-stick stops for wear.
- ☐ 7. Check the picking motions on both ends of the loom. (Good loomfixing practice requires that the lug straps be set as high as possible. Lug straps can usually be raised after new shuttles are put in the loom).
- ☐ 8. Set and time the harnesses. Be sure the top shed is $\frac{1}{4}$ in. over the shuttle when the lay is at the back-center position.
- ☐ 9. Reset the binders and checkstraps on both ends of the loom so that the shuttles will box correctly.

also be improved if a similar checklist is used when new shuttles are put in the loom.

The greatest asset from properly installed shuttles is, of course, longer-lasting shuttles.

Before a new set of shuttles is put in a loom, have the loomfixer check the shuttles and the loom.

CYCLONE DAMAGE was most severe in the card room and the warehouse. About 40 people were working in the card room when the cyclone hit at 1 p.m. on Saturday. Window panes started flying; and Greer Armstrong, overseer of carding, told everybody to lie flat. Mr. Armstrong, with broken ribs, had the only injury. (Cyclone collector for nappers is strewn in the foreground.)

After the Cyclone—

Remodernization at

OPENING ROOM accommodates 160 opened bales. Two opening lines are fed from seven feeders each, plus one feeder for reworkable waste. Forty bales go into a mix, and four mixes are used: three pure mixes (M 7/8, M 1 1/32, SLM 15/16), plus a blend. The opening room was doubled in size to 8,000 sq. ft.

► Less than a year after Buck Creek Cotton Mills was hit by a cyclone, the rebuilt mill was running full time

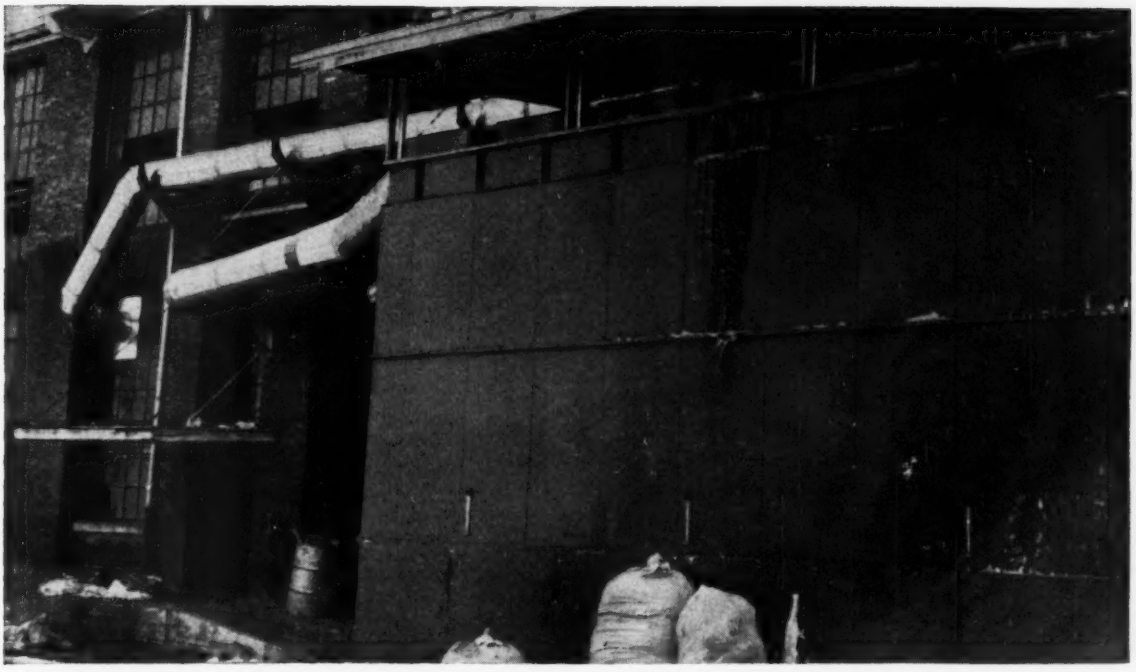
► Features: more floor space; two opening lines; rebuilt cards with individual drives; new drawing and roving frames; overhauled spinning frames, looms, and nappers; and a new condensing collector for the nappers

By THOMAS B. WINSTON
Assistant Editor, TEXTILE WORLD

WITH A $2¼-MILLION modernization program almost completed, Buck Creek Cotton Mills, Siluria, Ala., was hit by a 5-min. cyclone on April 18, 1953. Luckily it was Saturday and few people were working, but the machinery was all there. After the cyclone, it rained for a week.

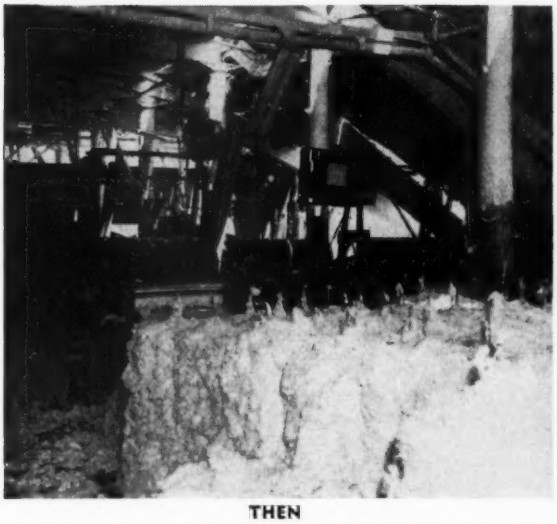
Damage: card room destroyed and 79 cards severely damaged; 144 brand-new Ideal drawing deliveries a total loss; three pickers heavily damaged; complete loss of 10 x 5 and 8 x 4 roving equipment; water damage to the opening line, spinning frames, 120 X-2 looms, and 14 new nappers; boiler house blown away; warehouse destroyed. Things were a mess.

"What did we learn from the cyclone?" said Fred F.



COLLECTING SYSTEM for nappers was changed to Spirakleen system, built by Turner & Haws Engineering Co., after the Cyclone system was destroyed. This condenser collector is adequate to take care of 12 36-roll, double-acting nappers and a box napper for flannel gloves. The collector is on the back side of the mill.

Buck Creek Cotton Mills



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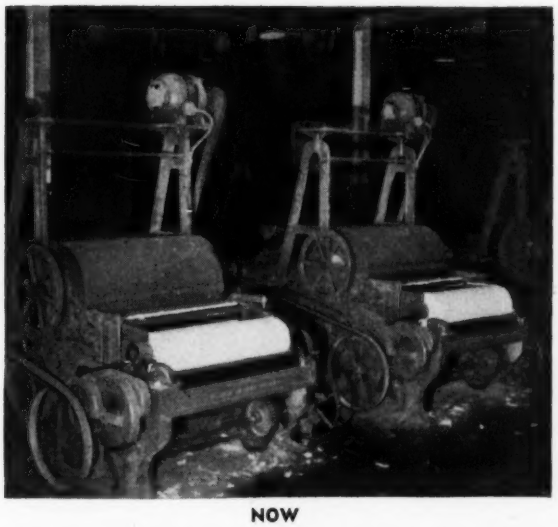

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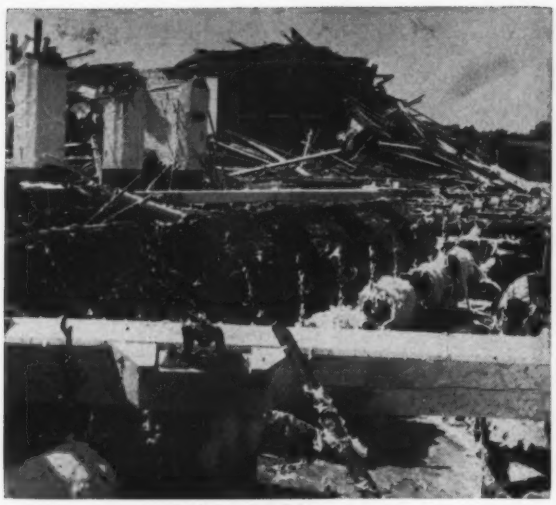
THESE THREE PICKERS were rebuilt by Aldrich Machine Co. and moved into new room twice the size of the old picker room. Two pickers were added to operate from the second opening line. All are individually driven and make 15-oz., 50-yd laps. All pickers are in the same room, which is directly above the opening room, and are supplied by a duct system. A Lummus return-air filter, which replaced the dust pit, has cut fires to one-tenth the former frequency.



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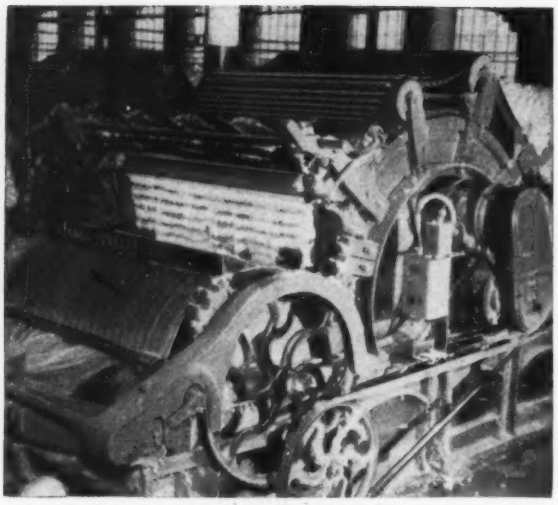


NOW

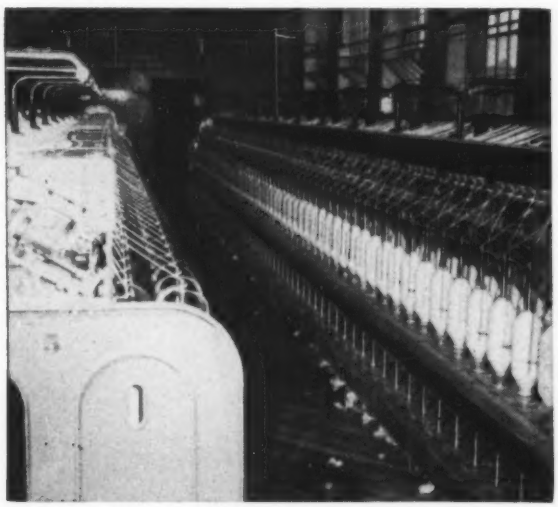
CARDS WERE SALVAGED, about 70 in all, and rebuilt by Saco-Lowell from the ground up: new clothing, feed rolls, comb boxes, blades, bearings, etc. The new American Pulley individual drives cut speed variation from 15% to 3%, and the room is kept cleaner. Continuous strippers are used on cards on coarse work. Production on 60-gr. sliver is about 10 lbs. per hr., which is much lower than previous production. With new and rebuilt equipment, Buck Creek is concentrating on quality.

Phillips, president. "In addition to our insurance settlement, we decided to kick in another $500,000 and do some more things we'd been wanting to do. This mill today is about $2½-million more modern than in 1946. My advice: be sure you have insurance for cyclones, business interruptions, and flood damage, too, if you're close to a river."

Since the mill building had to be rebuilt, it was a good time to make constructional changes. Buck Creek now has a second-story 12,000-sq.-ft. addition to the spinning room and opening and picker rooms doubled in size to 8,000 sq. ft. apiece. The cloth warehouse was relocated and rearranged to give an additional 20,000 cu. ft. The cotton warehouse was relocated, and the waste-reclaiming house was increased from 2,500 to 4,800 sq. ft.

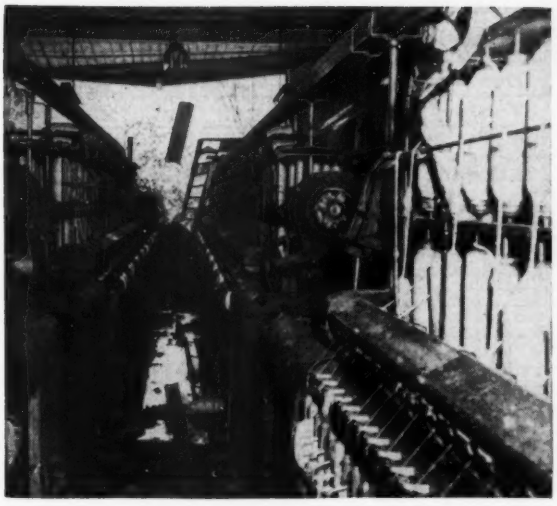
The damaged machinery was shipped out to be rebuilt while the construction was going on. Cards went to Saco-Lowell Shops and pickers to Aldrich Machine Co.

As soon as the building was ready, new machinery was installed: new Ideal drawing was put in for the second time; 14 new Saco-Lowell drawing frames arrived in October; in November, individual drives were put on the cards. Additional cards were shipped in from the company's Anniston plant, and overhauling on water-damaged equipment was well under way. "A payroll by Christmas" was the goal.



NEW FS3 ROVING FRAMES, 14 in all, replaced the old frames, which were completely lost in the cyclone. The 10x5 frames make mostly 1.0-, 1.5-, and 2.0-hk. roving, with up to 3.25-hk. for the soft-twist filling that goes into napped goods. Good roving is essential for soft-twist yarn.

NEW QUILLERS, 100 spindles of Whitin-Schweiter with automatic bobbin feed, were installed in the second-floor addition. The large paper-tube packages are made on 100-spindle Roto-Coners. In addition to the Whitin-Schweiters, Buck Creek has four Abbott radial quillers with 12 spindles each.



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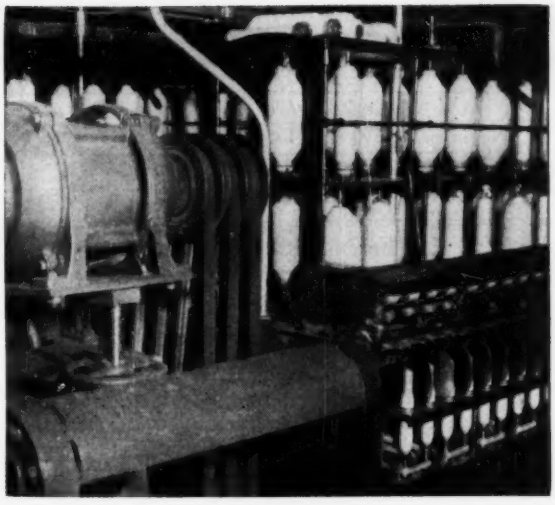


NOW

SPINNING FRAMES survived the storm in fairly good shape. All are H&B fine-drafting frames: 40 3½-in.-gauge warp and 36 3¾-in.-gauge filling, 272 spindles to a frame. Purchased about 1948, the spinning equipment is now the oldest machinery in the mill. If possible, draft is held below 16, but for 30s soft-twist filling, a draft of 30 is used with single roving. Spinners handle 14 sides—an increase of four sides as a result of better roving from the new roving frames.

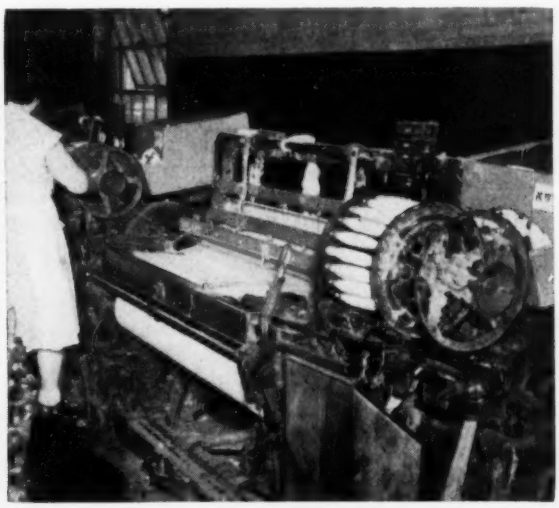
Other improvements made were the construction of a condenser-type collector for the nappers to replace the Cyclone collector and return-air filters in the opening room to replace the dust pit. The slasher was improved with a third cylinder, stainless-steel hoods, and new size boxes with a continuous-feed system.

The first machines were started the first week in January, and by the middle of April, Buck Creek was operating at almost full capacity. "We were a little overoptimistic about how long it would take to get going at full blast," says George Danner, superintendent. "It took us some time to appreciate what a different mill we had with the new equipment. We can really get out the quality now."

The management at Buck Creek was pleased to find that about 85% of the work force, after lying idle for over nine months, came back with the mill. Many of the people had been hired to do repair work on the village houses and mill.

The dyeing and finishing equipment wasn't damaged except for the water damage to the nappers. Buck Creek, a specialty mill, will be doing all its finishing as soon as additional equipment is installed: four jigs are in and four more are coming; two pad ranges are in, plus a gas-fired tenter with a starch range in tandem; four five-ton kiers are being installed. An additional 100-hp. generator will complete the equipment.

THEN



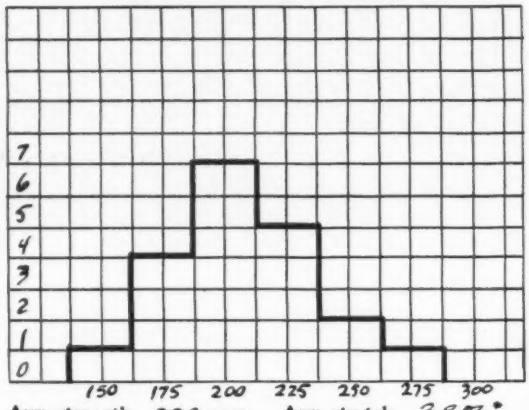
NOW

X-2 LOOMS were reconditioned after severe water damage; the looms escaped direct damage from the cyclone. The looms were covered with heavy coated paper to protect them from roof leaks. All looms were stripped down, cleaned, and overhauled; drop wires, tin rolls, etc., were replaced, and the electric stop motions were redone. One hundred looms are 42-in. X-2's; another hundred are 44-in. X-2's. Speed is held to 174 ppm. on all goods for long loom service.

Wamsutta Mills --- SLASHER-DEPARTMENT TEST

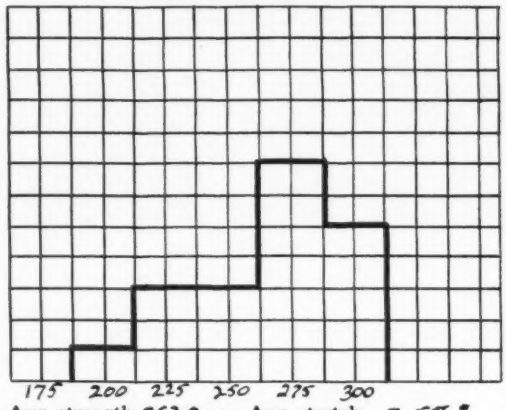
Style	4549	Date of test	
Yarn	47 / 1 CP	Test No.	
No. of ends	5636	Slasher No.	Uxbridge, #1
Boil-off loss	3%	Size content -- Wt. method	16.0%
		Size content -- Boil-off method	18.6 − 3 = 15.6%

Strength and stretch -- Unsized



Avg. strength 220 gms. Avg. stretch 3.9%*

Strength and stretch -- Sized



Avg. strength 253.8 gms. Avg. stretch 2.5%*

Percent increase of strength from sizing	26.9%		
Unsized coefficient of variation	13.5%	Sized coefficient of variation	11.3%

* Stretch figured at 150-gm. load

FIG. 1

THIS REPORT summarizes all the slasher tests done at Wamsutta and shows at a glance how sized yarn compares with unsized for strength, strength variation, and stretch. Size content by two methods is also shown. Strength was up 26.9% in this example.

How Wamsutta Checks SLASHER Performance

▶ Single-strand test results are grouped on a single form for easy calculation and give data on strength, strength variation, and stretch before and after slashing

▶ Boil-off tests check the accuracy of the quick size-content method used in the slasher room

By EDWARD S. RUDNICK, Director of Research, Wamsutta Mills

SLASHER PERFORMANCE is summarized on a single form (Fig. 1) at Wamsutta Mills, and single-strand tests furnish most of the data. The report form contains a histogram [a statistician's word for graphic representation of results similar to a bar chart.—EDITOR] that shows at a glance if anything is seriously wrong in slashing.

How Tests Are Conducted

The laboratory gets the same samples used in the slasher room to determine size content by Wamsutta's quick method ["Get Warp-Size Content in Four Easy Steps," TW, March, '54, p. 156]. These ½-yd. sized and unsized cuttings from the beams are conditioned overnight.

Single random ends are pulled out of the sample for testing on the Scott IP-2 tester at 10-in. gauge length. A convenient procedure here is to have a board with spikes made from an old reed or a Kirschner beater at each end of it, about 15 ins. apart. This board can fit on the IP-2 table, and ends can be readily pulled out for insertion in the tester. Twenty tests are made on the sized yarns, and all are recorded on the same IP-2 chart in groups of four. (See Fig. 2.) The same procedure is repeated on a different chart for the unsized ends from the same slasher set.

Instead of recording the actual breaking strength of each strand, we divide our charts into 25-gram increments, and the number of strands breaking in each increment is counted. From this test, the histograms on the

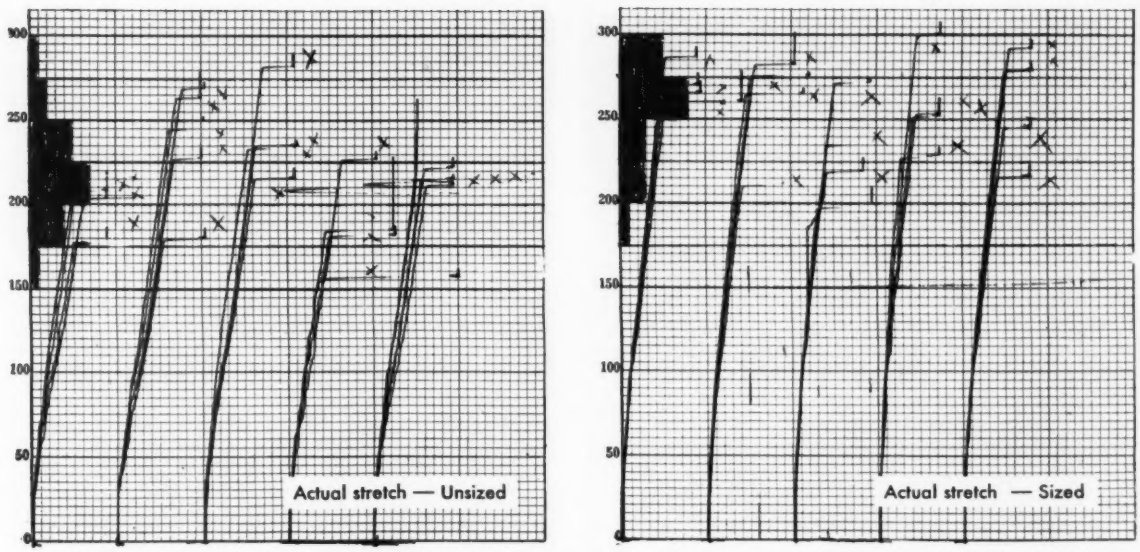


Fig. 2

TESTER CHARTS are the only record of strength tests; individual readings are not recorded. Breaking strengths are grouped in 25-gram increments in frequency diagrams at the left of each chart. Diagrams are turned to the horizontal for the summary report form.

left of the tester charts (Fig. 2) are made. On the report itself, this histogram is turned right side up so that each vertical block represents the number of strands breaking within the respective ranges of strength. (Of course, the strength scale is different for different yarns going into different warp styles.)

Calculations Are Simplified

Knowing the frequency and mid-value of each strength group, we can rapidly calculate the average from the following formula:

$$\text{Average strength} = \overline{\overline{X}} = \frac{\overline{X}_1 f_1 + \overline{X}_2 f_2 + \overline{X}_3 f_3 \ldots + \overline{X}_n f_n}{f_1 + f_2 + f_3 \ldots \ldots f_n} = \frac{\Sigma \overline{X} f}{N}$$

where $\overline{\overline{X}}$ is the average
$\overline{X}$ is a single mid-value
f is the frequency at a single range
N is the total frequency
Σ represents " the sum of "

Each mid-value is multiplied by the number of times a strand breaks within that range, these products are added, and the total is divided by the number of tests (20 in this case). The calculation can be done almost as fast as it is described, and this method is certainly simpler than interpreting individual strength values. (This is the same technique employed by many cotton mills in calculating the average and variation on picker laps from the Saco-Lowell lapmeter data.)

Weak Ends Break

But, of course, average strength is far from the whole story. The variation in strength is just as important. In general, it is not the ends with the average strength that break and cause loom stoppages, low efficiencies, broken ends in cloth, etc. It is the ends predicted by the "lower tail" of the histogram that we're concerned about. So we want to have a measure of the variation in strength of all the ends in the warp.

Assuming that the 20 sized and unsized ends we have tested are random and therefore representative of the hundreds of ends in the warp, we calculate the coefficient of variation from these same histograms by the following formulas:

$$\text{Variance} = \left(\frac{\overline{X}^2_1 f_1 + \overline{X}^2_2 f_2 + \overline{X}^2_3 f_3 + \ldots + \overline{X}^2_n f_n}{f_1 + f_2 + f_3 + \ldots + f_n}\right) - \overline{X}_2 = \frac{\Sigma \overline{X}^2 f}{N} - \overline{X}^2$$

$$\text{Coefficient of variation} = \frac{\sqrt{\text{Variance}}}{\overline{X}}$$

This method is similar to the previous calculation of the average; but this time the square of each mid-value (or mid-value simplified) is multiplied

CONTINUED ON PAGE 152

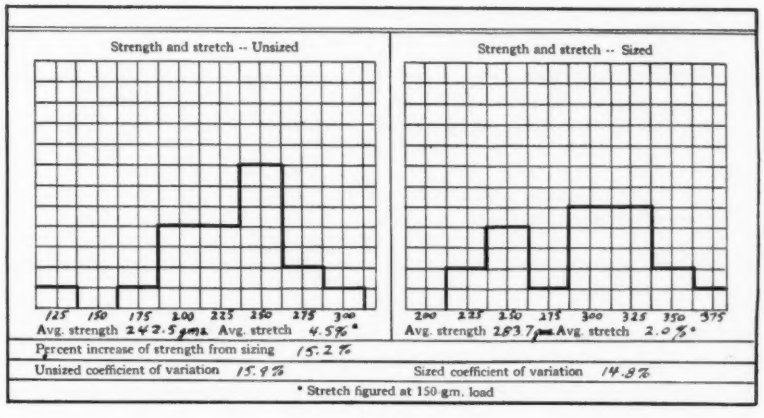
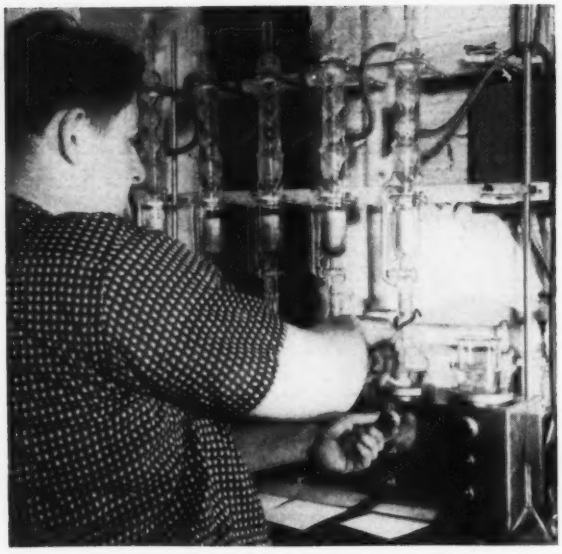

Strength and stretch -- Unsized
Strength and stretch -- Sized
125 150 175 200 225 250 275 300
200 225 250 275 300 325 350 375
Avg. strength 242.5 gms. Avg. stretch 4.5% *
Avg. strength 283.7 gms. Avg. stretch 2.0% *
Percent increase of strength from sizing 15.2%
Unsized coefficient of variation 15.9%
Sized coefficient of variation 14.8%
* Stretch figured at 150 gm. load

Fig. 3

TWIN PEAKS of yarn strength are easy to spot on this graphic report. A little sleuthing uncovered the fact that an older section beam had been mixed with newer and stronger yarn.

MOISTURE CONTENT is calculated on this moisture meter. The chart on the wall shows yarn sizes in 40-yd.-per-lb. intervals.



OIL CONTENT is checked by Stanley Soowal on a Soxhlet extractor to regulate the washing and cleaning processes.

Start Your Knitting QUALITY

▶ Soowal Knitting Mills maintains consistency in high-quality products by checking all yarns for size, twist, appearance, moisture content, and oil content

By JAMES H. BLORE
Assistant Editor, TEXTILE WORLD

STANLEY SOOWAL of Soowal Knitting Mills, Philadelphia, Pa., has devised a quality-control system based on yarn tests made in a specially equipped laboratory. Results of the tests are correlated with the knitting-machine adjustments and washing formulas to insure that quality is kept high and weights and lengths of finished garments are kept constant.

The laboratory is not large, but it contains two sensitive balances, a Whitin wrap reel, a conditioning oven, a Soxhlet extractor, a Suter twist tester, a Hart moisture meter, and a yarn-appearance reel. A girl has been trained to conduct and record the laboratory tests.

Two samples of each batch of yarn delivered to the mill are sent from

Yarn size	Yarn type	Color	Lot No.	Spinner	Dyer
3¾ run	Lamb's wool	Azure	10748	Spinwell, Inc.	Dyewell Corp.

Test for yarn size
No. of samples 12 Avg. wt. for 120 yds. 8.7519 Actual yarn size 3.8 run Yds. per lb. 6,080

Test for twist
No. of samples 8 Direction of twist Z Turns per inch 6.5

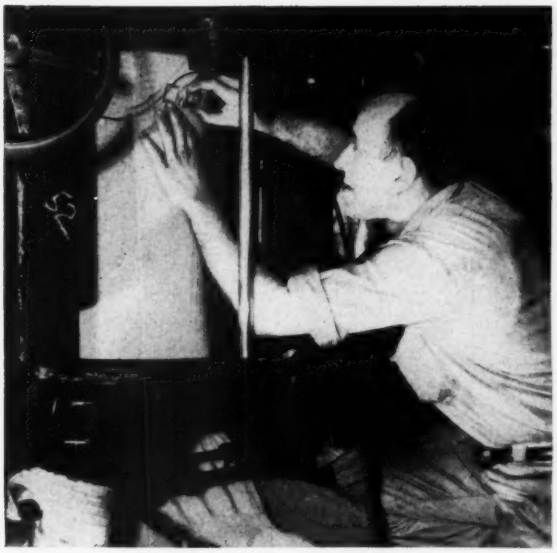
Moisture content 11.5 %

Test for oil
Weight of sample 10 gms. Weight of oil 0.75 gms. Oil content 7.5 %

Appearance: E G (F) P VP

Remarks:

YARN-TEST RECORDS are filed for future reference. Since the start of the system, yarn troubles have become less and quality is kept constant.



STITCH LENGTH on knitting machine is checked while fabric is under tension. The stitch is adjusted according to the yarn size.

A FURTHER CHECK for length is done at the start of a garment by measuring from the draw thread to the rollers.

CONTROL In the Laboratory

the winding room to the laboratory for testing. One sample is in skein form and is enclosed in an airtight glass jar to be tested for moisture content. The other sample is on the original package.

Yarn Number Is Yards per Pound

The first test is for yarn size. Twelve 120-yd. samples are weighed to within 5 milligrams, and an average weight for 120 yds. is calculated. This weight is checked against a wall chart, which indicates yarn number and yards per pound in 40-yd. intervals.

Next, skeins from the jar are removed and placed under the clamps of the moisture meter. The meter is adjusted to give a zero reading, and the sample is removed. The reading is checked for calibration with a chart on the meter. Each fiber has a different calibration, and calibrations are made for various blends.

Moisture content to 0.01% is determined in a few seconds with this instrument. A needle adapter is to be installed to test the moisture content throughout the cone. If the moisture content is found to be excessive, the spinner is notified and an adjustment is made.

Yds. per lb.	Stitch length			
	Style 204		Style 692	
	Body	Cuff	Body	Cuff
4,800	8 1/2	10 3/4	4 1/2	7 5/8
4,840	8 1/2	10 3/4	4 1/2	7 3/4
4,880	8 5/8	10 7/8	4 1/2	7 3/4
4,920	8 3/4	11	4 5/8	7 7/8
4,960	8 3/4	11 1/8	4 5/8	7 7/8
5,000	8 7/8	11 1/8	4 5/8	8

STITCH-LENGTH CHART is hung on the wall close to the knitting machine. Stitch lengths for each machine and style are listed according to yarn size in yards per pound.

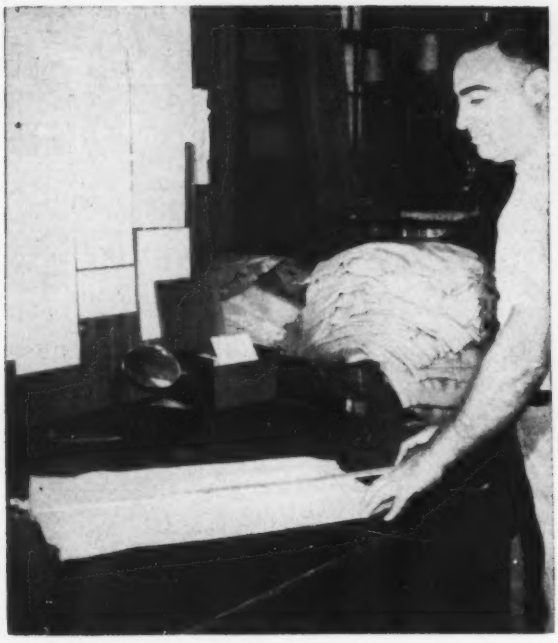
Check Color and Appearance

An appearance test is made on each lot of yarn by wrapping 50 turns of the yarn on a board. Mr. Soowal personally checks the boards and compares the appearance with previous samples. All the standards are filed.

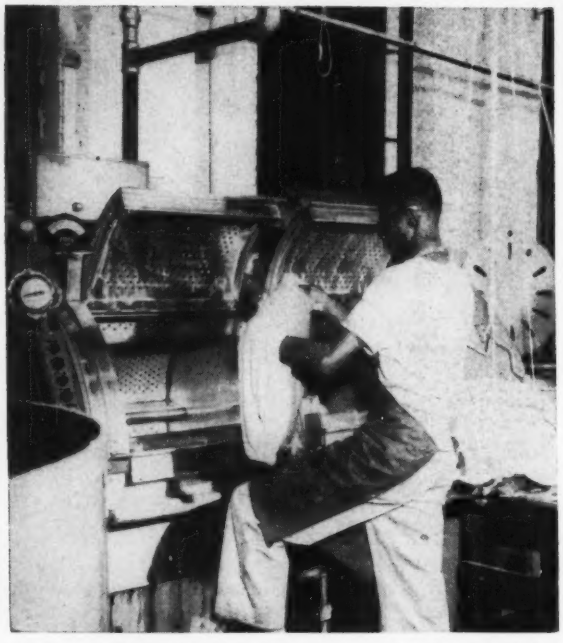
One color from each lot is clipped to the last lot of the same color as a check for shade correctness. If variations in shade are noted, the dyer is informed; and care is taken to separate variable yarn shades.

Each lot of yarn is tested for twist, because low-twist yarns make soft fabrics and fabric characteristics change with variations of twist. To combat variations in twist, Soowal plans to change washing formulas according to yarn twist.

Soxhlet extractions are made to determine the oil content in each invoice



GARMENT LENGTHS are measured by Ben Soowal. Three garments from each lot are checked for length, width, weight, and fabric appearance.



WOOL-AND-ORLON blends require a seven-cycle washing that takes about 25 mins. Operator takes out folds as he lays goods on the chute for extracting.

lot of yarn. If the oil content is high, the spinner is notified, because washing procedures are affected by oil content. The Soxhlet extraction lasts 4 hrs., and a fastness test on the dyed yarn is run at the same time.

Yarn Number Determines Stitch

The results of the tests are entered on a file card and kept for reference. The number of yards per pound is entered on the knitting ticket. When each new batch of yarn is started, the mechanic checks the fabric stitch length with a 1-in. glass. This reading is compared with a wall chart that shows the correct stitch length for the body and cuff for several styles at various yarn weights.

If the number of courses per inch does not agree with the wall chart, the stitch cams are adjusted. Three tests are made after each adjustment for stitch length and evenness of stitch. Each machine is checked twice daily by the mechanic for stitch length. The stitch is measured, while under tension, about halfway between the take-up rolls and the cylinder.

As a further control for length, the machine is stopped twice daily by the mechanic at the start of a draw-thread course. The mechanic measures the distance from the take-up rolls to the previously knitted draw-thread course. This measurement is checked against a standard, and the machine is adjusted if there is any deviation at all.

Three pieces from each lot are tested after knitting. These tests include measurements for width, length of body, length of cuff, evenness of stitch, and weight per dozen. This testing is done by the knitting-room superintendent, and he draws the mechanics' attention to all variations from standard.

All goods are weighed, and the weights are checked against cutting records. The fabric is assembled in racks according to the next operation, which is calendering, steaming, or washing.

Lines for each style and size are marked on the press bed to make sure that all lengths and widths are the same during steaming.

Wash by Fiber Content

Each fiber or blend has its own washing formula that has been developed through experience and in cooperation with chemical suppliers. Wool-and-Orlon blends, for example, have a seven-cycle operation that lasts about 25 mins. The washer has a time controller to stop it at the end of each cycle.

Lots are knitted to conform with the washer capacity. A small fabric sample is knitted at the end of each batch of garments. This sample is run through the washer, extracted, dried, and tested for oil content. If the oil content is not excessive, the goods are extracted and dried in the normal manner. If the oil content is above standard, the goods are dry-cleaned in a machine recently installed in the mill.

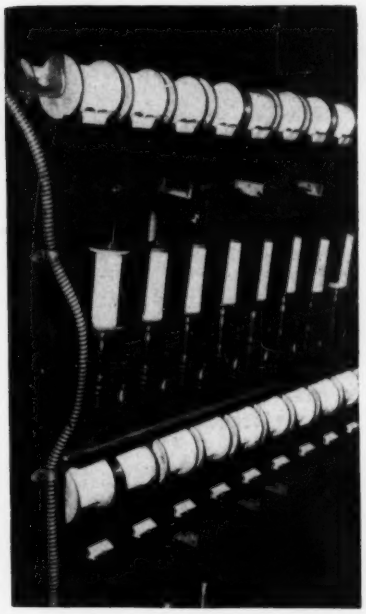
Water for washing is contained in a roof tank so that supplies are available at all times. A 2-hp. motor drives a pump to draw this water from the street level. Another pump draws the water through a softener and delivers the water to the heater over the washer. The softener delivers 80 gals. of soft water per minute, and it is generated every 60,000 gals.

The heater is thermostatically controlled at 140° F. Water temperature and water level are easily controlled on the Cummings-Landau washing machines.

As the goods are drawn from the washing machine at the end of the last cycle, they are opened out on a stainless-steel chute that telescopes to the machine door. The opening out is done to eliminate felting lines when the garments are extracted. The tray, which can be raised to clean the washer, delivers the garments to the extractor.

After extracting, the garments are dried in a Cummings-Landau machine equipped with a time-temperature control. As in washing, the extracting and drying periods are carefully controlled according to fiber content.

REDRAWING is a normal operation to transfer the nylon from pirns to 8-oz. packages. In addition to redrawing, plying and coning are normal.



SMALL-PACKAGE UPTWISTERS formerly used for crepe are used for Helanca.

How To Throw HELANCA

- **Standard throwing equipment is used for stretch nylon, but special techniques are needed**
- **High twist is put into the yarn, the yarn is set, and then the twist is backed out**
- **Two yarns, one S and one Z twist, are plied to give a balanced construction**

By THOMAS B. WINSTON
Assistant Editor, TEXTILE WORLD

STRETCH-NYLON THROWING requires closer control than standard throwing. It takes more time to run (about one to two weeks, depending on the construction), and it is more difficult to run. More supervision is required. The critical control is twist uniformity, and twist variation is kept within ±1%. Accurate tension control is also important.

The construction of Helanca is similar to crepe yarn with a two-ply, one left, one right, balanced construction.

Redrawing is normal. After redrawing, single ends of 70-den. nylon are twisted to approximately 75 to 80 tpi. Crepe uptwisters are used with a special four-arm Herr flyer with a balancing bail wire. The special flyer is important in controlling twist (twist is kept from running down through the wire eyes) and in preventing split filaments and breaks. Spindle tolerances are closer for stretch nylon than for regular throwing.

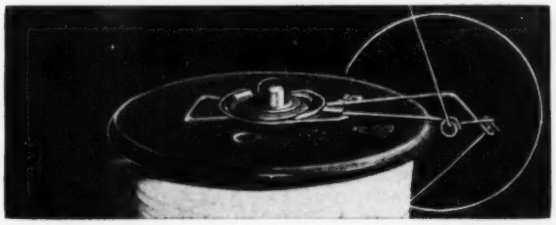
The twist is set in a high-pressure conditioning box at 270 to 280° F. and about 30 lbs. pressure for 30 mins. With atmospheric-pressure conditioners, a 2½-hr. cycle is used for an 8-oz. package. The yarn is then allowed to condition for at least 24 hrs. at room temperature.

After redrawing to a twister bobbin, the yarn is returned to the uptwisters for untwisting. A light flyer with a different wiring is used to remove the twist to approximately zero. For some constructions, yarn twisted in one direction is taken down to 3 tpi., while the other yarn is taken to zero.

Then two ends of opposite twist are plied together on standard ring twisters with 3 to 6 tpi.

Finally, the yarn is coned for shipment.

NOTE: *Helanca is a patented process controlled by Herberlein Patent Corp., 200 Fifth Ave., New York, N. Y.*



SPECIAL FLYER made by Herr Mfg. Co. is used to control the twist.

"An overseer should be a leader rather than a driver."

Tips for the SPINNING SUPERVISOR

. . . on

- Instructions
- Schedules
- Training
- Planning

By N. H. POMFRET

TIME IS THE MOST VALUABLE and perishable element that the spinning overseer has to deal with. It is imperative that employees be kept fully employed on useful work. No employee should have any doubt about what is required of him.

In his effort to prevent wasted time, the most important reminder for the overseer is to set an example. You can't expect employees to start work on the shift hour unless you're there before the shift starts. An overseer should be a leader rather than a driver, and his attitude should represent an invitation to work and not an order to work.

On occasion, an overseer has to become a driver if the department gets slack, but if a forceful approach becomes a habit, employees will begin not to take notice. (For their own peace of mind, it's natural that they would stop taking notice.) Here are some tips on how to run a well-controlled spinning department.

No Room for Guesswork

The spinning overseer should assist in preparing schedules for every person in his department. If the help of a timestudy department is available, so much the better. In any case, the schedules must be made with reference to normal operators working at normal speeds; and the overseer should be in complete agreement before attempting to put a new or revised schedule into operation.

Schedules should not be made arbitrarily by anyone, no matter how much experience he may have had. Facts and actual timings over a sufficient period should be their basis; there is certainly no room for guesswork. Schedules are best left flexible enough to be changed in the light of future experience. Changes to agree with improved methods, techniques, or skills are both profitable and just.

With the schedules written out and each operator fully informed about his duties, the spinner's most difficult task begins—to see that the schedules are carried out. To help him in this work, he would do well to memorize as much as possible of the schedules, certainly the more important features. He is then able to check everything his operators are doing when he walks through the department. With practice, constant checking becomes almost second nature.

Know What You Want To Say

Care should be taken in giving instructions, no matter how simple they may seem. To give clear instructions, the overseer must be sure in his own mind exactly what he wants done. Confused thinking, or thinking not carried to a conclusion, will be reflected in the instructions and the work performed. A great deal of time can be wasted by misunderstood orders.

It is useless to tell an operator to make a good job of, say, putting up roving. He must be shown what is a good job and what is a bad job. He must be told why one method is better than the other, and he must be shown how to perform the work properly. Then he must be checked to see that the instructions are carried out correctly—not once or twice, but many times until the approved method is done automatically.

Learn To Judge Progress

The overseer must learn to judge the ease or difficulty with which an operator performs his work. This ability is especially important when new operators are being trained or when new or modified frames are installed. It is good practice to put an operator on one or two sides the moment he is able to control them. Then increase the number of sides as fast as his skill develops; keep the number of spindles slightly greater than his ability as an incentive to work more efficiently, but not so great as to discourage the trainee.

All trainees do not learn at the same speed, and it does not follow that a person who learns slowly will not eventually become a first-class operator. The overseer's observations over two or three weeks can help him form an accurate forecast of an operator's potentialities. If a trainee does not have the makings of a full-load operator, it is a waste of time and money to persist in teaching him that particular job.

To cut training time to a minimum and to make corrective training unnecessary, new trainees should be placed under the care of expert operators with the ability to teach. The number of such people in any department is limited; thus the number of trainees who can be properly trained at any particular time is limited. The overseer will have to look ahead if he wants to make the best use of these important people's time.

Plan Ahead

The efficient overseer spends a large part of his time thinking and planning; a department will almost run itself if yesterday's plans were made right. Tomorrow's quality, price, and production depend largely on what the spinner thinks and does today.

He must always be at least one move ahead of his department. Before scourers, oilers, or maintenance men finish one job, another job must be ready for them. Machines must have an adequate supply of roving, and doffers must have enough empty bobbins and boxes. There must always be enough supplies such as oil, grease, and tapes at hand.

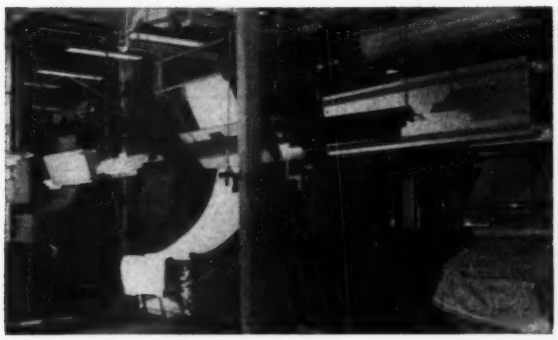
If frames are working on the end of an order for a certain yarn number, he must already know the next number. He should see that fresh gears are ready; if a change of roving is needed, new roving should be on the creel before the last set of the old number is doffed.

Nobody must wait for anything.

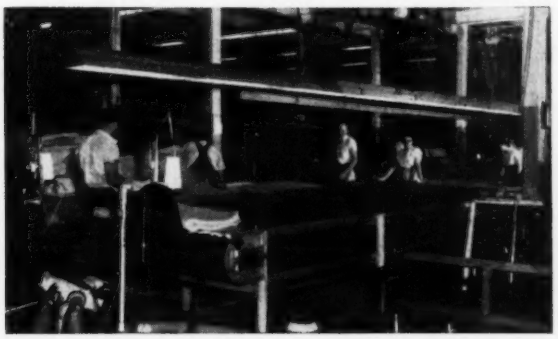
CONTINUED ON PAGE 85

CAUSTIC TANK, located near track, receives caustic supply from tank car. The caustic, purchased at 73% concentration, is diluted to 50% through a heat exchanger (center).

ACETIC-ACID TANK holds supply of diluted glacial acetic acid. Gray goods coming from the warehouse to the finishing plant pass under the raised walkway in the background.



SIX COMPRESSIVE-SHRINKAGE UNITS are set side by side. The delivery ends of these machines are located very close to a set of nine folders. The cloth in the foreground is ready to be folded.



NINE FOLDING MACHINES are located alongside a table with an endless aluminum-belt conveyor. The folder operators place the folded cloth on the table.

Here's a FINISHING PLANT That Needs No Storage Space

The Cooleemee finishing plant of Erwin Mills, Inc., processes up to 2,000,000 yds. of cloth per week without accumulating material between any operations. Need for storage space has been eliminated through—

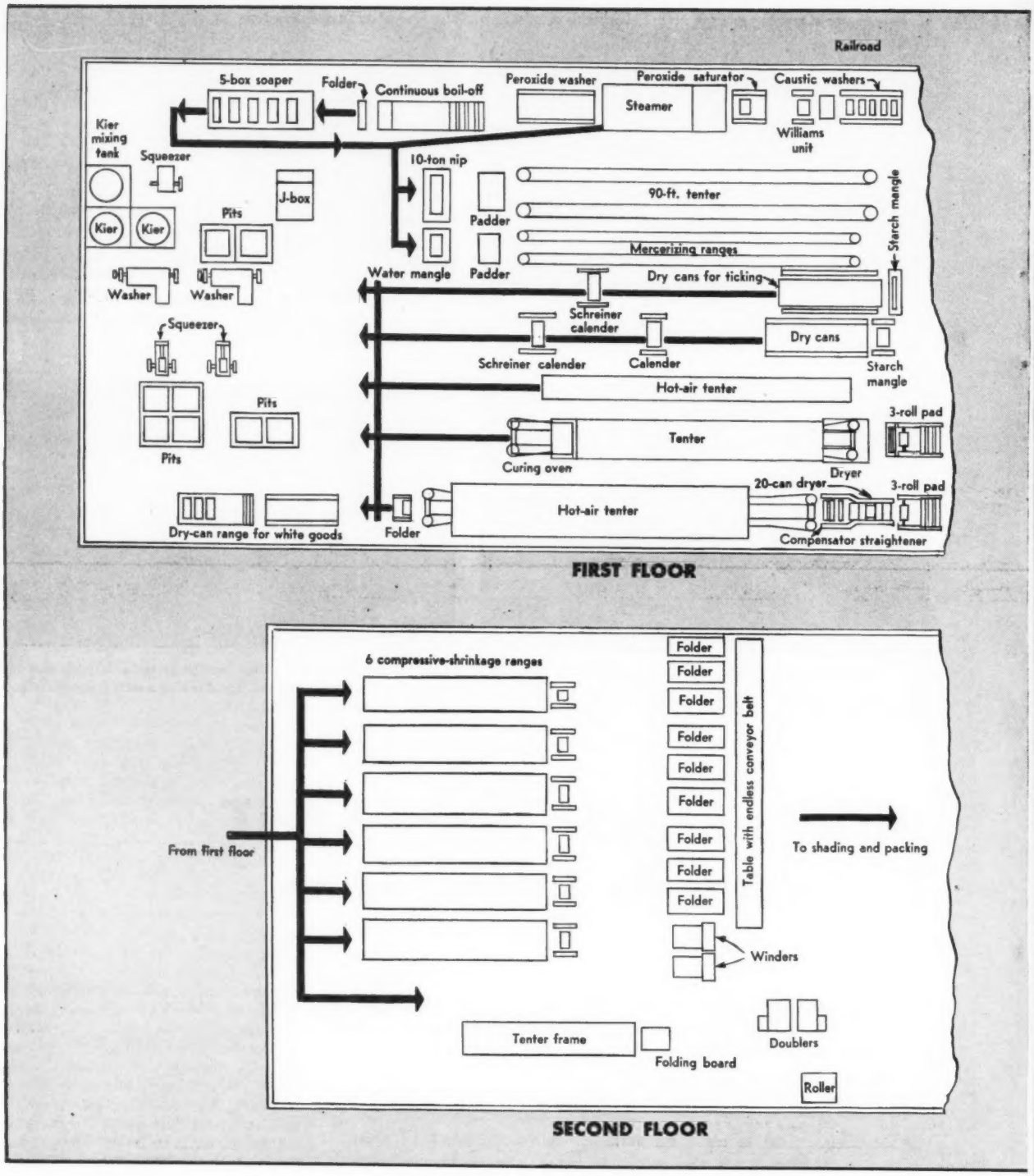
- **Efficient layout of equipment**
- **Synchronization of processes**
- **Spare equipment to reprocess work**

By MICHAEL LONDON, Assistant Editor, TEXTILE WORLD

In 1948, the Cooleemee, N. C., finishing plant of Erwin Mills, Inc., began a program of modernization. A low-ceilinged, narrow two-story building housed existing equipment, obsolete for the most part. Floor space was literally saturated with columns forming bays about 25 ft. wide; only 8 ft. separated the column centers.

Installing of continuous-processing ranges and handling the flow of goods between processes in an efficient manner presented a difficult problem. Together, E. M. Holt, former general manager of Erwin Mills, J. L. James, Cooleemee plant manager, C. Norris Rabold, director of research, and W. R. Wands, superintendent of the bleaching and finishing plant, developed a layout that makes it necessary for the material to move through the finishing plant with few stops, for little storage space is available. Processes have been so synchronized that for each yard of material coming from the warehouse a yard flows out of the finishing plant. Bottlenecks are avoided by having spare machines on hand for reprocessing materials.

The Cooleemee plant processes cotton fabrics and a small volume of cotton-synthetics blends. Fabric weights



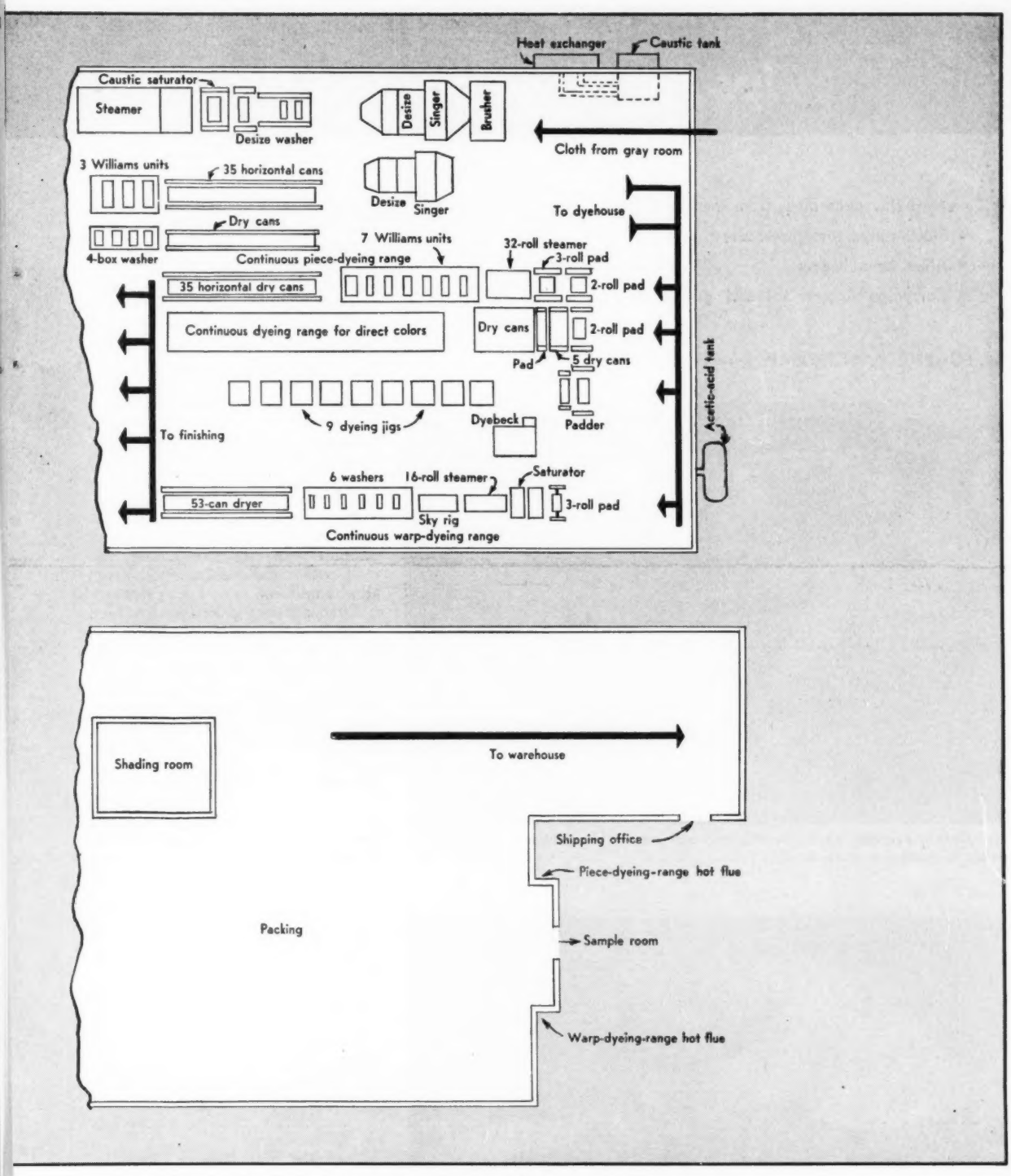
LAYOUT OF EQUIPMENT on both the first and second floors provides for little wasted

range widely, the average weight being 2 yds. per lb. The plant's capacity of 2,000,000 yds. per week consists of 750,000 yds. of heavy-weight dyed work and 1,250,000 yds. of colored-yarn fabrics, whites, and pastel shades.

Practically all goods are prepared for dyeing on a continuous open-width conveyor-type steamer. Some materials are prepared on an open-width progressive jig (continuous boil-off). The plant mercerizes 90% of the materials to be dyed on two chain mercerizers.

White fabrics or fabrics to be dyed in pastel shades are processed in kiers. Yarn-dyed fabrics with fast colors are bleached with peroxide in a miniature J-box.

Two pad-steam dyeing ranges equipped with hot flues are used for sulfur, vat, and azoic colors. Another



movement of material. Cloth is kept moving until it leaves the finishing plant.

continuous range is used for dyeing fabrics with direct colors and light-pastel vats. There are also nine jigs for processing small lots with all types of dyes.

Efficient conveyor-steamer preparation and the pad-steam system of dyeing that Cooleemee uses exclusively contribute to uniformity of shade, minimum of shades per lot, and freedom from end-to-end and side-to-side taper.

Finishing equipment includes three high-speed hot-air tenters with two sets of dry cans. One tenter is equipped with a curing oven to process resin finishes and durable water repellents in a continuous operation.

The plant applies all types of specialty finishes, including the Everglaze

CONTINUED ON PAGE 166

Tips for Slashing and Weaving

▶ To weave fine gabardines from wool-synthetics blends—

- Slash warps with great care
- Align loom beams
- Campaign against oil and grease stains

By **EUGENE P. SCHREMP,** Consulting Editor, TEXTILE WORLD

LOOM-BEAM FLANGES should be tightened and aligned before beams are put in the slasher, to prevent uneven cloth.

BUNCHED-UP HEDDLES should be corrected by setting the tension on harness ribs as soon as a warp is tied on.

FINE WORSTED GABARDINES ordinarily require moderate attention in slashing and weaving; but when some of the newer synthetics are blended with wool for such fabrics, certain points deserve increased attention. Here are some thoughts you should keep in mind.

Slash Warps Correctly

Slashing is one of the most important operations if worsted-synthetics blends are to be woven successfully. Poorly slashed warps cause trouble that results in low weaving efficiency and fabric imperfections.

In preparing the size mixture, the amounts of water and size should be uniform from mix to mix. The size temperature and cooking time should also be uniform.

After a proper procedure has been set up, daily reports should be kept so that the amount of size used for each warp set can be determined.

Best results are obtained if the slasher is run on a three-shift basis. Stopping a slasher each day invites trouble, and labor costs are increased because considerable time is lost in washing out lines. Size is also wasted, because it is often not practical to keep size from one day to the next. One of the most serious troubles encountered in stopping slashers for one or more shifts is formation of hard size that causes warp smashes in weaving.

Good results are obtained when fine single yarns are slashed on a hot-air slasher set up for a double dip. The yarn runs through part of the dryer and then back through the size box for a second dip. With this method, size pickup is high.

Another way to increase the effectiveness of the slashing operation is to use a viscometer at the size box.

Since viscosity changes with size-box temperature, temperature controls are also necessary.

Yarn stretch in slashing should be held to a minimum because too much stretch weakens worsted-synthetics blends. Too much pressure at the beam also weakens the yarn.

Keep Loom Beams Aligned

On gabardine fabrics, it is important to keep the loom-beam flanges set no more than 1 in. wider than the reed width of the cloth. Controlling

the width of the warp between the beam flanges prevents selvage ends from chafing and also reduces warp breakage.

The flanges on the loom beams should also be tight against the beam barrels and perfectly true. To keep loom beams in good condition, have employees move beams only on trucks. Dragging beams across the floor causes them to get out of alignment.

Beam flanges out of alignment cause high and low places in the warp as the warp is wound off at the loom. This condition causes the cloth to weave tight on the high part and loose on the low part.

Another result of warps slashed on beams that are out of alignment is that the cloth will slip out of the temples when the warp slackens on the low part.

Careful attention to little details in slashing, such as keeping loom beams aligned, will help keep weave-room efficiency high.

One of the most important things to watch in preparing gabardine warps is to keep the ends from being crossed. Give special attention to the type of tape used at the slasher for holding the ends. Tapes that dry up and allow the warp ends to roll should be avoided. The tape should hold the ends firmly but should also release the ends without breaking them when it is removed.

Cloth Must Be Clean

Good weaving practices start with cleaning the loom thoroughly before a warp is put in. Oil and grease stains cannot be removed easily and cause serious problems when light shades of gabardine fabrics are finished.

Although it is sometimes possible to remove grease or oil stains with a cleaning fluid, there is always the chance that the solvent will remove so much of the natural oil from the fibers that the spot will show after the cloth is dyed and finished.

The best way to prevent oil and grease stains is to train weavers and loomfixers to keep oily hands and tools off the cloth.

Oil stains are sometimes caused by overlubricating picker rods. Oil-soaked leather bumpers on the picker rod will also throw oil on the cloth. Petroleum jelly substituted for oil in lubricating the picker rod often helps eliminate this trouble. Pickers that do not require lubrication are also a help.

Oil spattered from the picking roll and picking shoe soils a lot of cloth. A sheet-metal guard fastened to the loom frame at the back of the picking shoe will prevent this type of oil stain.

Drip pans under the harness sheaves prevent a lot of dirty oil from dropping onto the warp and woven cloth. The pans should be wiped clean and checked for leaks periodically.

Another trouble spot that results in oily cloth is the drip pans under the box-chain levers and sprockets. These pans must be kept free from oil.

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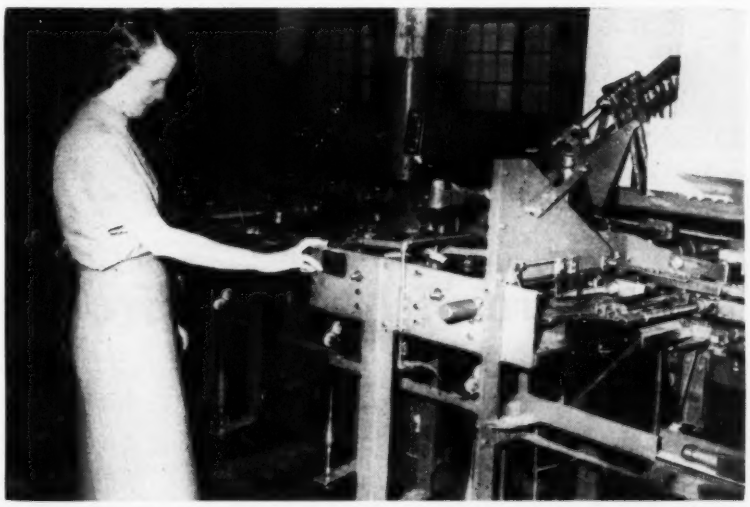
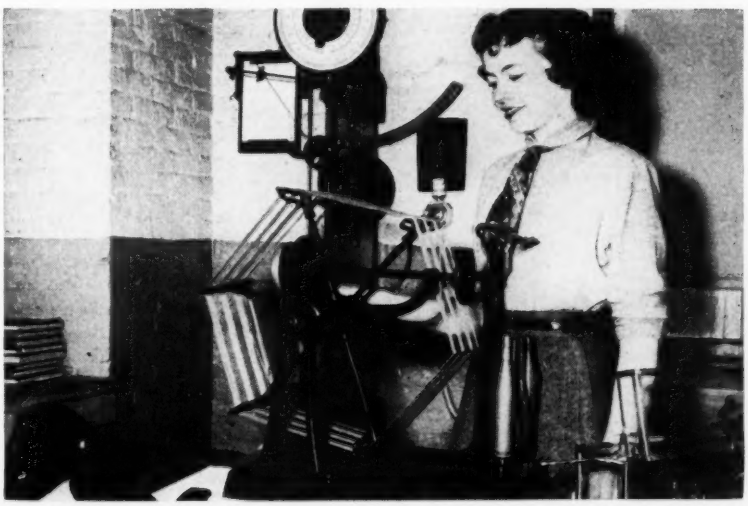
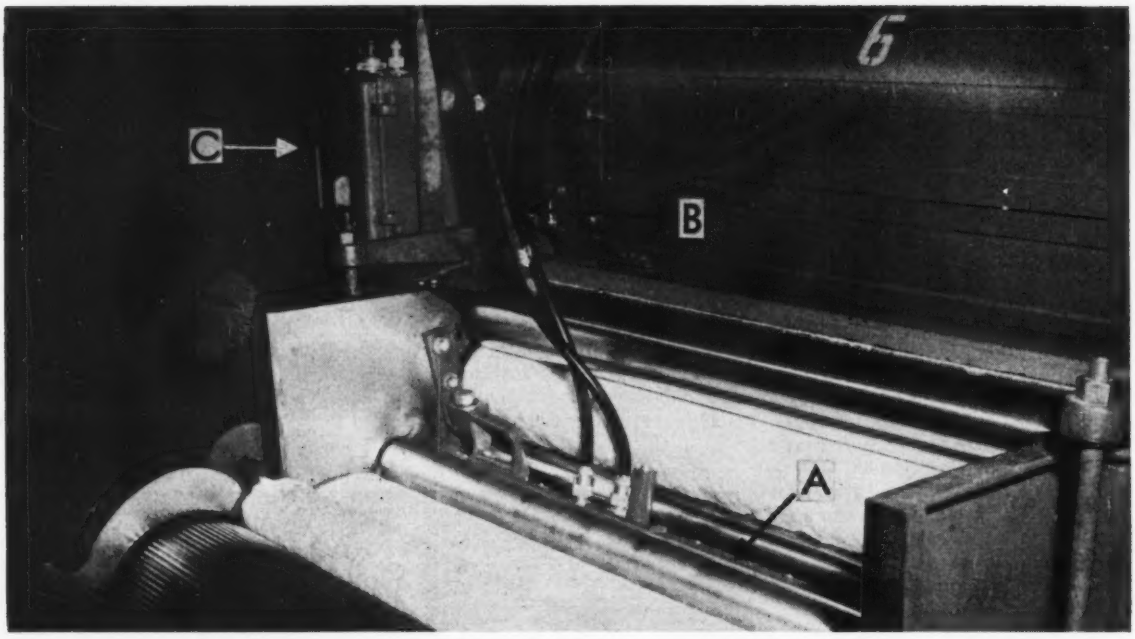


FILLING BUNCHES should contain 4½ picks of filling. Set the quiller bunch builder for this amount.



SYSTEMATIC TESTING of warp and filling yarns will uncover yarn defects and serve as a guide in preventing fabric faults.



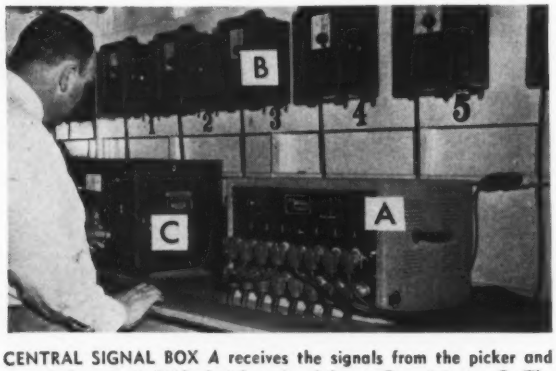
MEASURING ELECTRODES *A* pick up the thick- and thin-place signals from the running lap, and these signals are transmitted through wires *B* to adapter box *C*. From here, they go to the control station in the picker room.

How Borden Mills Improved Its PICKER LAPS

▶ **A new inch-by-inch-variation tester for picker laps helped Borden Mills cut its maximum lap variation a third and its coefficient of variation a quarter**

▶ **Repeat patterns indicate picker parts causing variation**

By P. M. THOMAS, Editor, TEXTILE WORLD



CENTRAL SIGNAL BOX *A* receives the signals from the picker and passes them to individual-picker signal boxes *B* and tester *C*. The recorder is to the left of Joe Mattox, who is switching the tester from one picker to another.

On Jan. 7, 1954, the eight pickers at Borden Mills, Kingsport, Tenn., showed an average maximum variation of 28.5% and a coefficient of variation of 5.74%. By the end of April, four months later, those figures had dropped to 20.7 and 4.37.

Daily tests on the pickers showed the following improvement in monthly averages:

	Maximum	Coefficient
Jan.	30.1(%)	5.92(%)
April	20.7	4.34

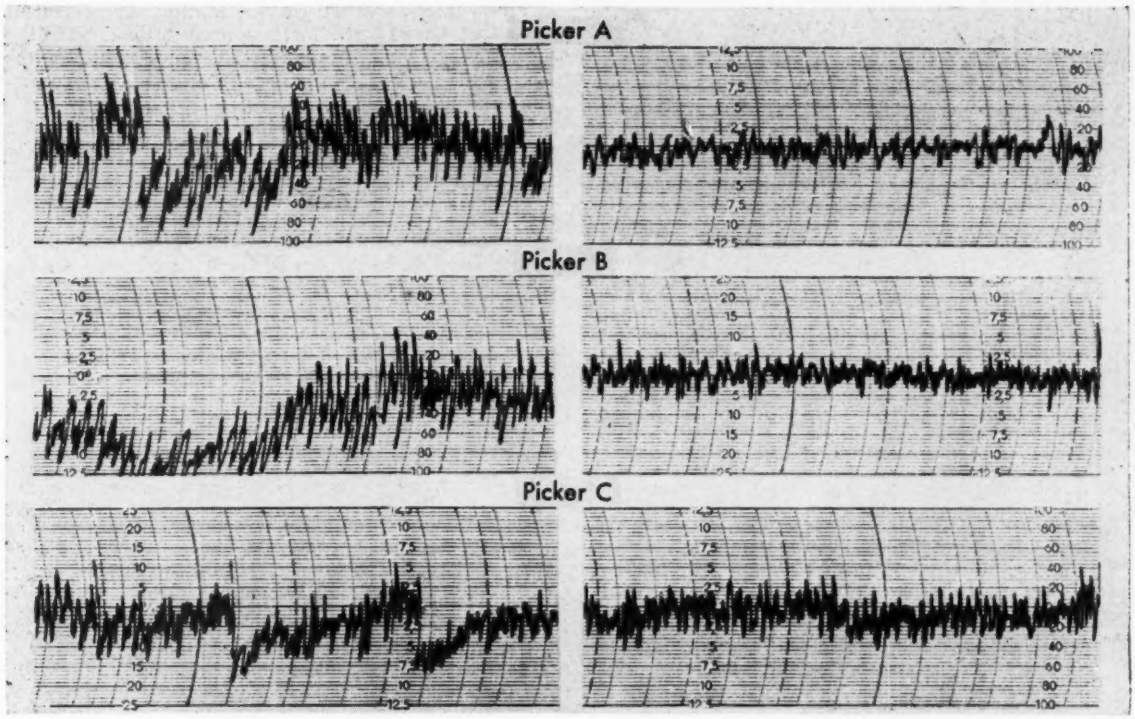
Borden's picker-lap improvement was obtained through two things: (1) a new testing method that reveals short-term lap variations, and (2) corrective picker maintenance based on lap-test results.

Testers Show Variation

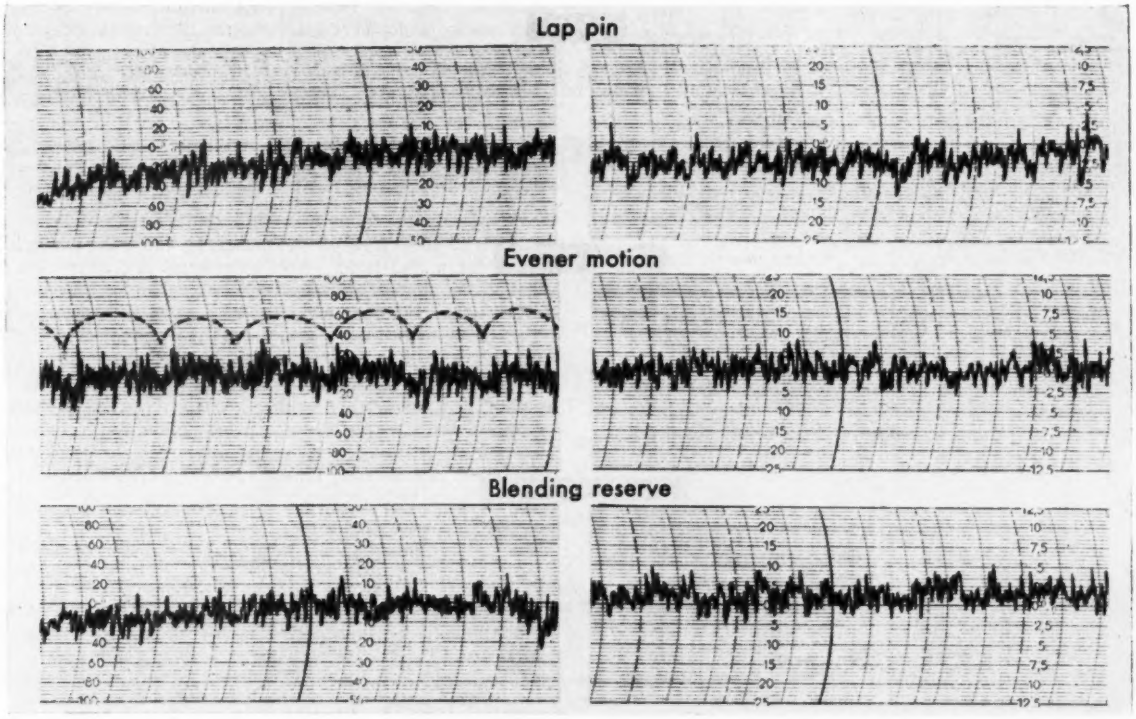
In addition to its Saco-Lowell lapmeter, which Borden has been using for some years to test laps for long-term weight variation, the mill recently installed on each of its pickers a Uster Lap Varimeter for use with a Uster Evenness Tester. With the Varimeters, Borden is now able to check consecutive 1-in. lengths of lap for weight variations right on the picker.

With a chart of the inch-by-inch variation in a lap, the mill can put its finger on trouble spots in the picker by running down the variation repeat patterns.

For example, if a certain variation shows up on the chart

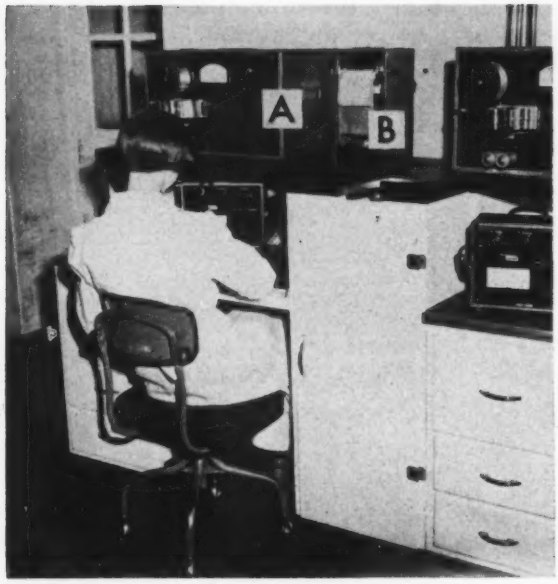


Improvement in variation on three of Borden's pickers is shown in these charts made in January and April.

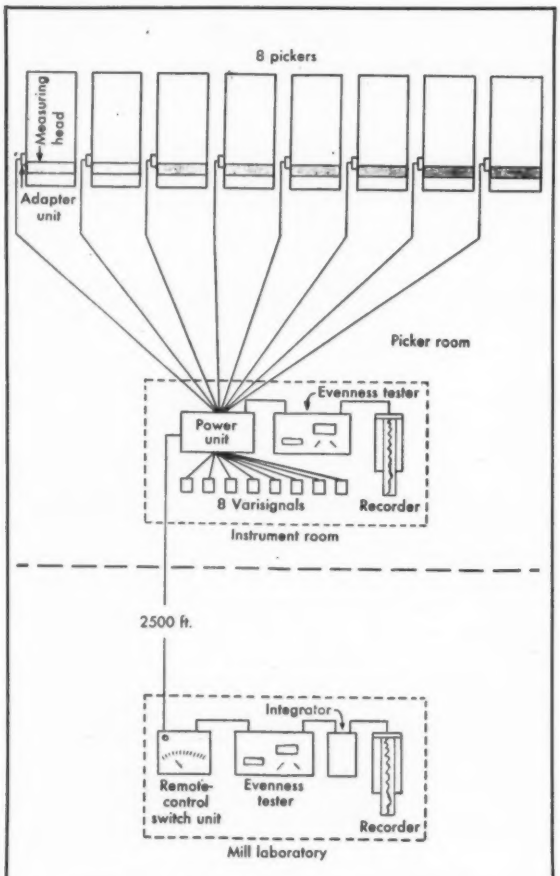


Picker Faults Corrected

Variation patterns (left) pinpointed picker faults causing undue variation in the laps. Charts to the right show lap evenness after (top) ball-bearing lap pins were put into use, (middle) new evener-motion belts were put on, and (bottom) blending-reserve feed was increased.



TESTER *A* and recorder *B*, located in the laboratory, are used here by Technician Lydia Fowler to check one lap from each of the eight pickers. Unsatisfactory results found in this daily test are reported to Joe Mattox.



Borden Mills' Varimeter Installation

at 9.4-in. intervals of the lap, Joe Mattox, superintendent of carding, knows that something needs to be done to the press roll. If trouble comes at 11.5-in. intervals of the lap, it's the draw-off roll; at 16.5-in. intervals, it's the bottom plain roll.

"Hunting down trouble spots in this way is only a matter of arithmetic," Joe says. "You know the speed of lap delivery and how fast you're running the chart paper. From that point, you work back through the picker. Every running part of the picker has a certain diameter and speed, and any defect a part is making will show up at regular intervals in the lap and will be recorded on the chart."

But there are limitations, Joe cautions. So far, he has been able to match chart variations with causes back only as far as the condenser roll of the front screen section of the picker. Farther back than that, variation gets to be so long term that several things may cause it.

Here's Borden's Setup

Reduced to its essentials, the Varimeter installation measures thick and thin places of the lap as it runs between two electrodes and converts these signals into a recorded chart. At Borden, the installation works like this:

The two electrodes, called the measuring head, are installed on the front of the picker in the 5 or 6 ins. of space between the front calender rolls and the winding head. The electrodes, one above and one below the lap sheet, extend across the width of the picker so that the whole width of the lap is measured.

As the thick- and thin-place signals are picked up by the electrodes (which might be called "feelers"), the signals are relayed to an electronic adapter box on the side of the picker. The adapter converts the signals to sound-frequency-voltage variations.

Borden wanted its installation arranged for easy checks of lap quality and picker maintenance; so these thick- and thin-place signals in the adapter box are transmitted electrically to two control points, one in the picker room and one in the laboratory located in a separate building near the mill.

Lights, Counters, and Charts Used

A small control room was built on the spare floor of the picker room in front of the pickers to house the control units of the installation. These units work this way:

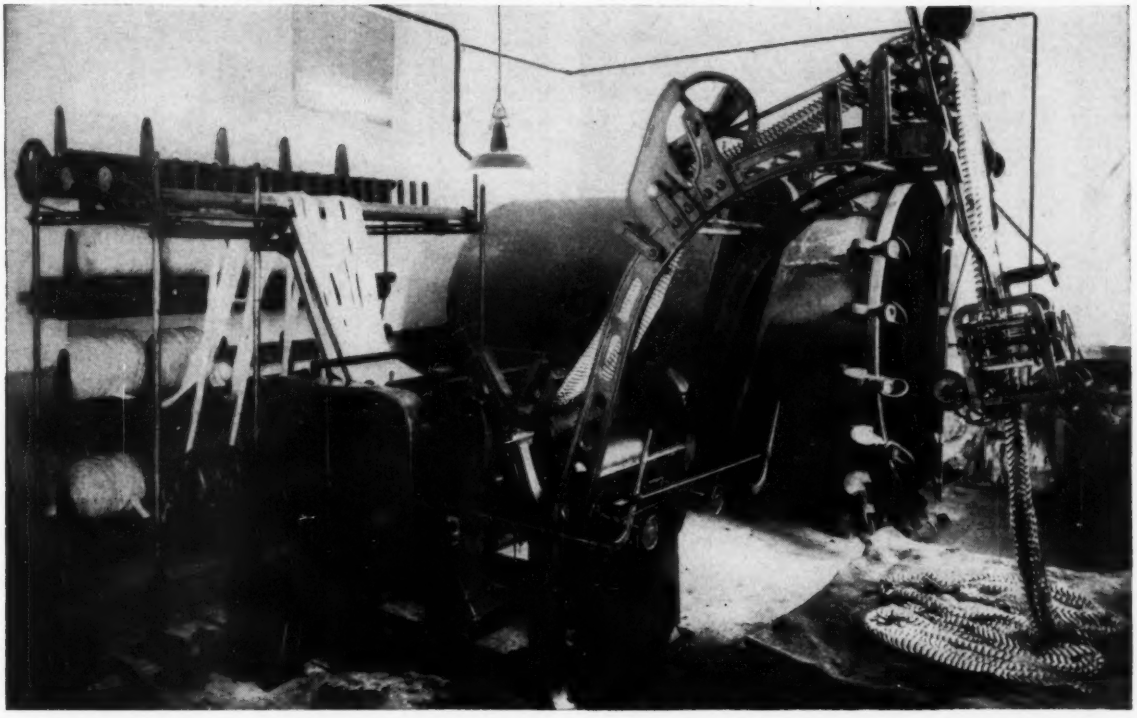
The thick- and thin-place signals from the adapter box on the picker are channeled by wire to a central signal box in the control room. On the front panel of this box is a small red light for over-the-limit thick places and a small green light for under-the-limit thin places. Also on the panel is a switch controlling a chart recorder so that any one of the eight laps running can be charted.

Connected to the central signal box are eight separate signal boxes, one for each picker, set to flash red and green lights as limits are exceeded and to clock out-of-limits occurrences.

Joe Mattox has his picker-room second hand on each of the three shifts check and chart a lap from each picker every day. If one of the pickers is making out-of-limits laps, it is checked at once and the fault corrected.

The second control station, located in the laboratory, consists only of a tester and recorder that can be set to pick up signals from any one of the eight pickers. Lab technicians test one lap from each picker every day. If one of them is out of limits, the technicians call Joe Mattox and report it.

By this testing routine, Borden gets four checks each day on each picker.



SLIVERS, processed in the regular gill box on the unit, form a web on which the grooved printing rolls print stripes. The stock is piled loosely and allowed to dry overnight. The autoclave in the background fixes the dye on the wool. Backwashing then removes superfluous dye paste.

Modern VIGOUREUX PRINTING *Produces Uniform, Fast Colors*

► No other process can duplicate the even shades on worsted top dyed by Vigoureux printing. Chromium dyes are producing colors fast enough for men's-wear fabrics.

BY USING THE Vigoureux printing process, a mill can produce good blends of white and colored tops for fine worsted fabrics. Even several preparing and doubling operations on intersecting gill boxes do not produce such uniform-colored blends.

The demand for extra fastness, however, has made necessary the addition of newer techniques. Instead of acid dyes, for example, faster chromium dyes are being used.

In the Vigoureux printing process, wool slivers are passed through a regular gill box with rolls at the delivery end to print on the passing web. A rubber-covered roll, immersed in the dye, transfers the color to a carrying roll from which the printing rolls pick up the dye.

Diagonal grooves on the printing rolls print the dye in parallel stripes on the slubbing, and the type of roll used determines the amount of color on the top: rolls with a greater area of raised surface deposit more dye. The make-up of the printing paste also influences the shade of the blend.

In a dye kettle with a false bottom, a dye-fixing compound is prepared: 2.5 kg. of British Gum (Dextrinose Starch) and 97.5 kg. of water are mixed in the upper section of the kettle, and the bottom is filled with water. A stirrer is used to keep the compound in motion until the starch is completely dissolved. The dyestuffs are then dissolved in boiling water, and the fixing compound is added according to the formula.

Then 1% glycol or similar oils, 1.5% pine oils to prevent foaming, and sodium chlorate are added. The solution is raised to the boiling point, and chromium acetate 20° Be. is added. The following is a typical dye formula:

Black 25-50% Color
For 100 kg. printing paste

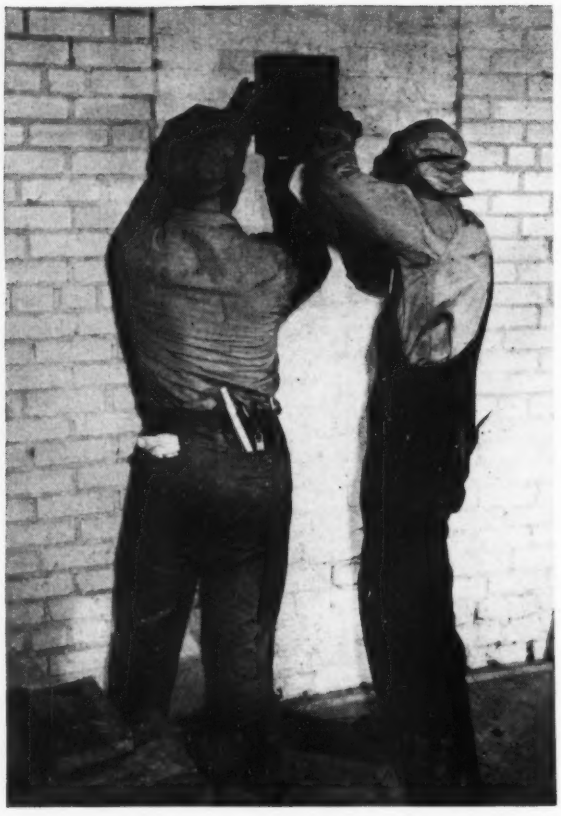
	Grams
Black chromium dyestuff powder A.S.	6,750
Green Alizerine G.	150
Yellow chromium dyestuff	100
Water	34,000
Fixing compound	35,000
Starch (regular quality)	6,000
Sodium chlorate	1,200
Chromium acetate 20° Be.	17,000

The density of the web should allow the dye to penetrate both sides. After being printed, the stock is loosely

CONTINUED ON PAGE 164

Based in part on information received from Ernest L. Frankl Associates, New York, N. Y.

STEEL I-BEAM is penetrated with two studs driven by the tool. The fluorescent-lighting fixture is hung in just 3½ mins. The cost: two externally threaded studs, 13¢ each; two eye couplings, 8½¢ each; and two powder loads, 5½¢ each; total, 54¢. The tool is used without danger in arm's reach of a 15-hp. motor.



BRICK WALL receives four 14½¢ externally threaded studs to hold an 8x10-in. junction box. Ray Bowman, head electrician, is firing the studs into the wall. The holes in the junction box fix the tool's position. Nuts hold the box to the wall for quick removal. All fixtures are mounted with threaded studs.

Anderson Shoots Up Fasteners To Speed MAINTENANCE JOBS

▶ Studs and drive pins are literally shot from a powder-actuated tool to fasten fluorescent-lighting fixtures and other equipment. Fixtures are hung from steel I-beams in less than 3½ mins.

By JOE L. BURRISS, Master Mechanic, Anderson Mill

WE HAVE BEEN USING a small powder-actuated tool at the Anderson Plant, Abney Mills, for the past four years to reduce the amount of work done by our maintenance employees. The tool is used by electricians, mechanics, plumbers, and carpenters throughout the mill to reduce their work. One tool is transferred between the departments.

Drilling and Tapping Are Out

We paid $119.25 for our Ramset Jobmaster Model 122M, complete with attachments and case. The tool fires 22-caliber blank cartridges and drives ¼-in.-dia. studs and drive pins into steel, brick, and concrete.

We bought the tool to reduce the amount of physical labor necessary to do certain tiresome jobs our maintenance employees always dreaded. The tool has taken the hard work out of most of the jobs and, in addition, has cut the cost of doing the jobs.

For example, drilling and tapping overhead steel I-beams from a ladder or scaffold are always hard on the man doing the job. In a newly constructed card room, we recently hung the fluorescent-lighting fixtures from 16-in. I-beams without drilling any holes. We used the fastener to drive externally threaded studs through the ¼-in. surface of the beam. Then we screwed two eye couplings into the studs and hung the fixture chains to the rings.

When we drilled and tapped holes in I-beams for fixtures, we considered about 10 mins. per hole average time because the electrician had to stop to rest often. Now the electrician can fasten two studs with the gun and hang a fixture in less than 3½ mins.

We have standardized on studs and drive pins used with the tool, and we now use only a few types. Drive pins are used to fasten metal to brick and concrete where the job is considered to be permanent. Pin heads are of ¼-in. dia. and shanks are ⅛-in. dia. The over-all length varies up to 3⅛ ins., depending on the work to be fastened.

Only two types of studs take care of most of our work. Both studs are ¼-in. externally threaded. One is 1⅜ ins. long over-all; the other is 1⅞ ins.

Powder charges for driving fasteners come in four calibrated loads. Each type of load is marked by a different color to designate the powder load. The loads and colors are: light, green; medium, yellow; heavy, red; extra heavy, purple.

The Tool Is Easy To Use

The tool isn't difficult to use, but it is used only by qualified men who have been instructed by a Ramset system specialist. At present, a machinist, head electrician, head plumber, and head carpenter use the tool.

Tool operation is simple. Only four steps are required:

1. Load the tool by inserting the selected fastener and powder charge.
2. Place the tool against the work and position it properly.
3. Press the tool firmly against the work and perpendicular to it.
4. Pull the trigger. This action fires the powder load if the tool is in the correct position for operation. The elasticized red-tip pilot of the fastener guides the fastener straight into the work.

The powder charge cannot be fired unless the working face of the tool is exactly parallel to the work to be fastened, because a safety plunger is depressed only when the two surfaces are parallel. Both safety to operators and perpendicularly set fasteners result.

The type of fastener (stud or drive pin) and the size of powder charge is decided before the job is begun. Then an experimental powder charge is fired to check the depth of penetration. To lessen the penetration of a charge (when a change from one charge to another is too great), we position the fastener away from the point of the charge in the tool an inch or less. Now that we're experienced in using the tool, we can drive the fasteners home almost every time.

There Are Dozens of Tool Uses

It's easy to set a group of fastenings in a straight line. On narrow I-beams or similar surfaces, we position the disk calibrations on the tool shield at the correct distance we want to place the fasteners from the edge. Then the tool is held flush with the edge of the I-beam, and all fasteners are placed in a straight line. On wide surfaces, we work accurately from a chalk line.

The disk calibrations are numbered on a shield at the working face of the tool. The shield can be set so that the tool will place a fastener any distance from ⅛ to 1 in. from the edge of a surface or a chalk line. From 1-in. to 2¼-in. adjustments can be made in ¼-in. marked and locked positions.

The tool is used almost constantly by someone in one of our maintenance departments. In addition to hanging fluorescent-lighting fixtures from steel I-beams in our new card room, electricians used the tool to put up junction and outlet boxes, control panels, and conduit straps.

Fluorescent fixtures were hung from steel beams in an entire weave room without covering the looms and without stopping any looms. Since there were no metal chips from drilling and tapping holes, no warp ends were broken on the looms.

Plumbers used the tool to insert studs in steel I-beams and brick walls in the new card room. Standard pipe clips are held by the studs to support ½- to 2-in. vertical piping. The plumbers also use the tool to do on-the-job work in all production departments.

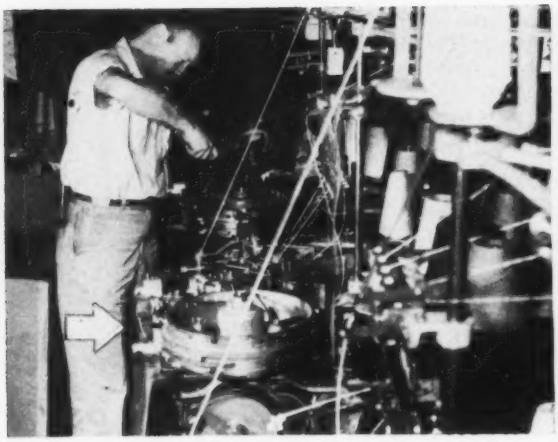
Carpenters do work such as fastening steel plates to brick walls in production departments to protect the walls from truck damage. Corner plates at elevators, doors, and other areas are also attached with the tool. Recently, a worn concrete walkway was re-covered with sheet steel, and the steel was fastened with drive pins.

Many other smaller jobs not easily reached with an electric drill and tap wrench are done quickly and easily with the powder-actuated tool.

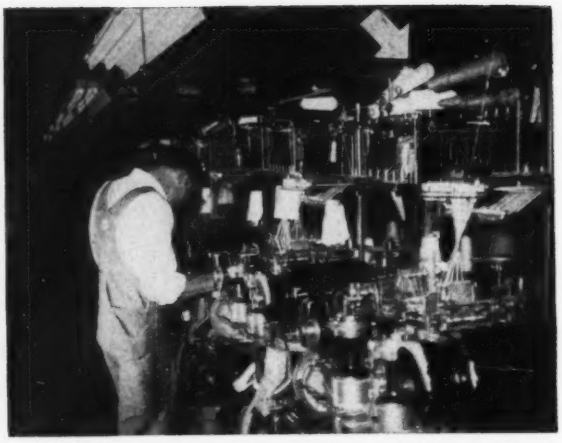
PLUMBER'S WORK is done quickly and with ease. Head Plumber Mike Joffred is firing a ¼-in. externally threaded stud (13¢) into an I-beam for a standard pipe clip to fasten a compressed-air-line outlet. A permanent drive pin could be used, but Abney prefers to have all equipment easily removed.

STEEL-TO-BRICK FASTENING with a drive pin is made by Head Carpenter Willard Cheek. A piece of 12-gauge sheet steel is being fastened to the soft-brick wall of the spinning room with 3-in. drive pins (13½¢ each). The steel is to protect the corner from passing doff trucks.

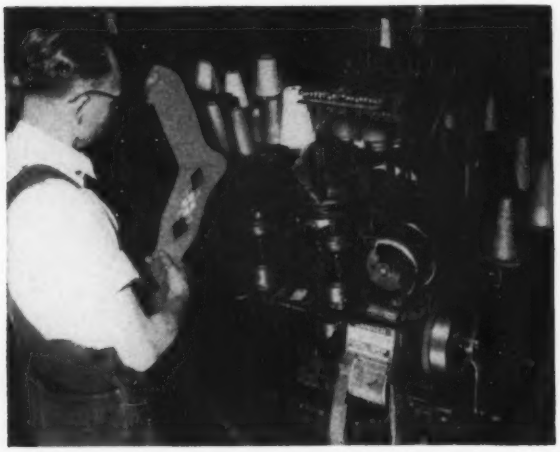
HARD-TO-REACH PLACES are easily reached by adding a barrel extension to the tool. An externally threaded stud is being fired into the flange of an I-beam to hold a clip for a ½-in. electric conduit. Conduits of ½- to 2-in. size are strapped with the powder-actuated tool.



HORIZONTAL PATTERN DRUM selects yarn fingers and clutch positions. Numbers on the drum make timing easier.



YARN RACK for overplaid yarns allows larger packages to be used and allows the yarn to feed better to the needles.



INSPECTION for size and pattern correctness is done twice each shift by the fixer in addition to the knitter's inspection.

TRIMMING of the loose threads is now done on a Ginsberg machine. The knitter, relieved of this job, concentrates on inspection.

How Unique Knitting Co. Makes New Kinds of ARGYLE SOCKS

Here's how two new machines

Banner SCOP

Crawford pattern

are used to turn out high-quality argyles that are different

By JAMES H. BLORE, Assistant Editor, TEXTILE WORLD

WHEN UNIQUE KNITTING CO., Acworth, Ga., decided to enter the argyle business, it decided to (1) retain the high quality of its products and (2) produce patterns that were different. To do this, the mill installed two of the latest-type argyle knitters—Crawford pattern machines (see p. 108) and Banner SCOPs.

Unique's knitters and fixers had many years of experience on Komet machines, and they were able to

master the new argyle machines in a few weeks.

The Crawford machines are all 84x4-in. models, and one girl tends 20 machines. The two lines of machines are back to back with a gap at the middle to allow the operator easy access to all machines.

Production Is High

The machines are single feed, but they each produce 2½ to 3 doz. pairs of socks each 8-hr. shift from 4s combed cotton yarn. The high-quality yarn and the low work assignment that allows ample inspection time contribute toward the comparatively low seconds rate of 3 to 5%.

On the Crawford machine, a horizontal pattern drum selects the yarn fingers, and numbers around the drum indicate the yarn finger that is in action. To make for easier timing, the mill has carried this idea further and marked the clutch positions with red paint on the same pattern drum.

Because there are no loose ends to clip, the operator simply inspects each sock, turns it inside out, and bundles it with 23 other socks to make a 1-doz. bundle.

Two Knitters Handle 24 SCOPs

There are 20 SCOP machines in position; and when four more machines arrive, the battery of 24 machines will be attended by two knitters. This work assignment has been made possible by relieving the knitters of trimming the loose threads. Relieved of this work, the knitters can concentrate on inspection.

Trimming is done on a Ginsberg machine. The trimming-machine blade is adjusted so that the ends are not cut off too short. Although the trimming-machine operator inspects each sock as it is slipped on the form, she is able to clip up to 150-doz. socks per shift. She is able to do a good job because she concentrates on trimming.

Another aid to the knitter is a special yarn rack that holds the yarn supply for the overplaid yarns. A bobbin stand with horizontal pins was constructed to hold the yarn cones. The yarn now draws off the cones more freely than from the cheeses formerly used, and the larger packages reduce knots and downtime.

Every SCOP machine is checked twice during each shift by the fixer. He pulls a sock on a form to check it for size and pattern errors such as misplaced overplaid positions.

Unique Knitting Co. believes that color and design sell socks. In addition to true overplaid argyles, panel diamonds with overplaid are produced in 10 different color combinations.

CARDING TOPICS *From* STA

► Here are the carding highlights of the spring meeting, Northern North Carolina-Virginia section, Southern Textile Association

Pneumatic Lap-Rack Controls

General approval was given pneumatic lap-rack controls. One mill is making a 69-yd. lap; another is making a 65-yd., 16-oz. lap and a 58-yd., 14-oz. lap with 60 lbs. pressure on the lap rack. There has been no trouble with men objecting to the heavier laps and none with split laps.

Bottle Oilers Replace Grease

One large organization with 789 cards has been using bottle oilers for 10 years. There are seven bottles on each card, and hot bearings are less common than before. All grease was taken out, and none is used now.

Refinishing Flexible Bends

Resurfacing of the flexible bend at the back of the card has helped card performance at a couple of mills. The theory is that cards get rough, especially at the back where the flats hit first, and that refinishing is in order at some time in the card's life. Keeping the flat chains tight is one way to minimize this wear.

Card Settings

Some mills are experimenting with four-point settings and checking nep counts. Other mills are sticking with five-point settings.

One thought brought up was this: Why not set the card from the flexible bend instead of the stand?

Milling Flats

When should a set of flats be milled? Every time you put on new clothing, according to some mill men. Another man recommends milling the flats when they are worn as much as ⅛ in. at the flexible bend.

Some mills replace the chains when flats are removed, others just take out links (as many as six in some cases). Chains wear out before card clothing at one mill, but a new chain oiler may increase chain life. The oiler is left on a card for one shift and then moved along to another card.

Cloudy Drawing Web

One mill wanted help on elimination of a cloudy drawing web. Here are some of the suggestions:

Try less pressure on card condenser springs.

Check drawing rolls. New ones may be needed.

Be sure roll settings are not too close and that the break draft is right.

Rubber-Topped Flyers

Although one mill reported no difference when the Clemson Pretwister was used on roving flyers, other mills reported success. Uniformity was up 25% at one mill, and another mill reported no difference in evenness. One mill is using a rubber-base paint instead of cut-down baby nipples or rubber tubing, and results are good.

Carding Briefs

► One mill is spinning 21s from 7.5-hk. roving with a conventional drafting system, and results are good.

► One brand of metallic-roll drawing got quite a boost from several mill men who described it as:

". . . . best drawing we ever had."

". . . . best metallic-roll drawing I've ever seen."

". . . . just as nice after three years as it was when new."

► To fill up the cans on high-speed drawing, one mill has put 8 lbs. of lead in the tube gears as an experiment.

► In changing from metallic top rolls to cushion rolls in drawing, a couple of mills added 4 lbs. to each weight.

► Straight-tooth bobbin gears on roving frames are making these frames sound like spinning frames in one mill. The new fly frames came equipped with the new type of gear.

Three ELECTRICAL-MAINTENANCE Questions Draw Interest of Alabama Mill Men

- ▶ **What do you do about—**
  - **Inspecting, cleaning, and maintaining frame and ceiling cleaners?**
  - **Replacing flexible metallic cables with nonmetallic cables?**
  - **Cleaning and replacing fluorescent lamps and fixtures?**
- ▶ **Here's how Alabama mills solve these problems**

THE SECOND SESSION of the meeting of the Alabama Textile Operating Executives held at Auburn, Ala., this spring was given to answering three important questions on electrical maintenance.

All mills reporting were concerned with group lamp replacement. The methods used for cleaning seem adequate, and mill men wonder if this time can be used for both cleaning and replacement.

Frame and Ceiling Cleaners

Periodic inspection, cleaning, and lubrication is the answer to economical maintenance of frame and ceiling cleaners in carding and spinning.

Most mills are using carbon brushes with pigtail shunts on their cleaners. Some mills make a practice of removing three of the six brushes because maintenance trouble is less when only three are run.

Another serious cleaner-maintenance problem is that of the cleaner jumping the track.

How To Keep 'Em on the Track

Both problems are solved by Mill A, where the maintenance practices are:

"Every six weeks, we clean our Parks-Cramer cleaner brushes with a small brush. We use all six brushes. If lint gets under the brush when only one brush is used, the brush will single phase.

"Spinning-department employees blow off and clean the tracks twice each day.

"Electrical-department employees lubricate the cleaners by following the manufacturer's recommendations.

"We keep the track level and rigid, and we aren't bothered with track jumping."

Other mills giving their methods of maintaining cleaners are:

Mill B—"Our frame cleaners and ceiling cleaners in the spinning room are Parks-Cramer. The ceiling cleaners in the card room, winder, warper, and quiller rooms are American Mono-Rail.

"The Parks-Cramer cleaners are oiled once each week by the spinning-room oiler and are checked every two or three months by the electrical maintenance department.

"The American MonoRail cleaners are greased and checked every two or three months by the electrical-maintenance department.

"The spinning-room oiler blows off the cleaners once each day with an air hose.

"The ceiling cleaners in other departments are cleaned about once each week."

Mill C—"We lubricate our cleaners every 40 hrs. The spinning department cleans the units every 8 hrs.

"We keep tracks level and rigid to prevent cleaners from jumping the tracks."

Scheduled Work Didn't Pay Off

Mill D—"The most economical maintenance program for frame cleaners is to follow the recommended lubrication schedule of the manufacturer and do maintenance work only when it's needed.

"We have no regular inspection program. We wait for breakdowns for all repairs. On week ends, we used to have a man go over all cleaners to remove brushes and take lint and gum from the brush holders. We discontinued this practice; it did not pay off because maintenance repair jobs were not reduced.

"The spinning department cleans the cleaners weekly.

"To prevent track jumping, we keep the 'no jump' hooks properly adjusted, keep the roving properly placed on top of the creel, and keep brush holders free of lint."

Mill E—"Our maintenance for frame and ceiling cleaners is not based entirely on schedules. We repair cleaners when repairs are needed and also have spare cleaners available for breakdowns. Our American Mono-Rail cleaners give little trouble except for an occasional replacement of contact slides.

"We do have a definite lubrication schedule for our cleaners. They are lubricated every three months; one time we change oil, and the next time we add oil.

"Production departments clean the ceiling units once each week and the frame units twice each week. When a unit gives trouble, we also clean it then. After the units are cleaned, the production department oils the wheels, etc.

"By keeping the track level and properly aligned and the wheels in good condition, we don't have any track-jumping trouble."

Tips from other mills that result in better operation of cleaners are:

"Track jumping can be reduced by installing widthwise brackets between supports to keep the track from spreading."

"On reversible-type cleaners, keep the tension on the bumper spring properly adjusted to prevent the cleaner from striking the bumper with too much force."

"Install track stabilizers."

"Keep safety hooks adjusted properly."

Nonmetallic Cables

Thirteen mills reported that they are changing from flexible metallic cables for connections between starters and motors to synthetic-rubber cables. The one disadvantage of the new cables is offset by the many advantages.

The disadvantage reported by one mill is that the inside-wire insulation will not withstand heat and oil. This fault can be remedied by taping the "turtle backs" with cellophane-type electrical tape.

Advantages listed by the mills for the nonmetallic cable are:

Mill A—"It can be bent to conform to any surface. Its flexibility aids in belt-tension adjustment. Motor bearings are easily changed because the motor can be taken from the motor base and set on the floor without disconnecting it from the starter.

"The fittings help retard moisture and dust."

Mill B—"We are saving money by by using nonmetallic cables."

Mill C—"Our weave-room fires have dropped considerably since we have been using nonmetallic cables."

Mill D—"This type of cord cuts down short circuits considerably."

Mill E—"We have not found a flexible steel conduit that will hold to the connectors when it is bent or moved excessively. When this cable slips out of its connectors, the insulation on the wiring is damaged.

"This hazard is eliminated when nonmetallic cables are used."

Nonmetallic cables are being used between motor starters and picker motors, slubber-frame motors, spinning-frame motors, and loom motors with practically trouble-free operation. They're also being used with Pneumafil installations and underframe cleaners.

Men from one mill report they're successfully using the nonmetallic cable 100% in slubbing, drawing, spinning, twisting, and weaving. The cables are also used on card drives.

Group Lamp Replacement

Plant lighting was discussed from several standpoints. A great deal of interest was shown in group replacement of fluorescent lamps, although only one mill is actively engaged in this practice and its activities are confined to an area containing 2,500 lamps.

The program has been tested only six months. After this limited testing, the plan appears practical; but cost figures aren't yet complete enough to reach a decision.

Generally, mills reporting on group replacement of lamps consider group replacement practical in large mills but impractical in small mills.

The discussion on cleaning and replacement systems for fluorescent lamps received considerable interest. Mills reported these practices:

Mill A—"All fluorescent lamp fixtures are checked once each week. At this time, burned-out lamps or lamps not giving proper light are replaced. Any burned-out lamps not grouped together are replaced when they are reported to the electric shop."

Mill B—"All light-fixture cleaning is done by the production department involved."

Mill C—"Lamps are replaced by the production department. If several lamps are out at once, the electrical department is requested to replace them."

Mill D—"We replace all burned-out lamps every Monday morning. Weaker lamps will not relight after the weekend shutdown."

Mill E—"All fluorescent-lighting installations are gone over by two maintenance men about every 18 months. They wash and clean all reflectors, clean the channels, make any needed repairs, and replace all lamps that have reached the end of their useful life.

"The same two men check all fluorescent-lighting fixtures twice each week to replace burned-out lamps and defective starters. They also make any needed repairs."

Mill F—"Each production department cleans its own fluorescent-lighting fixtures. The department overseer decides on the frequency of cleaning. Normally, the lamps are cleaned with a brush or dry rag once each week to remove lint and dust.

"The reflectors are washed once a year. This work is done during the shutdown for the vacation period."

Spinning Supervisor

CONTINUED FROM PAGE 70

The overseer must get and maintain control of his department and not let the department get control of him.

Look at the Records

Although a spinning overseer must look ahead most of the time, he also has to look backward to prevent the repetition of previous mistakes. For this purpose, records of production and use of labor should be kept. The ordinary records kept by every department for wage purposes are useful if attention is given to them at the right time.

A quick look at the hanks produced by each frame the previous day and a check with the operator when a frame is below normal can be instructive. To be effective, however, the inquiry must be made early; otherwise, the operator will have forgotten pertinent details.

Another use for the records is to help the overseer make quick and accurate decisions in reference to the use of labor during periods when the department is not working at full capacity. Suppose, for example, the records show that with all the workers on full load and spinning the numbers usually spun, a 50,000-spindle department can be operated by 25 ring spinners, 7 doffers, and 8 cleaners.

Let's consider this to be the best arrangement for the particular department; then let's try to keep as close to it as possible. A few figures, easily remembered, can help us:

Spindles per employee $= \frac{50,000}{25+8+7} = 1,250$

Spindles per spinner $= 2,000$

Spindles per doffer $= 7,143$

Spindles per cleaner $= 6,250$

The spinning overseer, faced with a sudden epidemic of absenteeism or a partial shutdown, can use these figures to help him remarshal his forces. He will never be able to meet these figures exactly because most of his decisions will be made at shift changes without even the use of paper and pencil. He also has to consider individuals—their personalities and their capabilities.

Afterwards, he can check how well he made the decisions. Suppose four of his people didn't come to work and he rearranged his department to run 42,500 spindles with 23 ring spinners, 8 cleaners, and 6 doffers.

Spindles per employee $= \frac{42,500}{37} = 1,148$

Thus $\frac{1,250}{1,148} = 1.09$ operators that are being used for each one under ideal conditions.

Modern FINISHING and DYEING From AATCC Symposium

▸"AATCC Research—Key to Quality" was the theme of an all-day meeting of the American Association of Textile Chemists and Colorists in New York City

▸Articles presented here, based on papers given at the symposium, cover solvent dyeing of acetate, finishing techniques for several synthetics, and dyeing wool-synthetics blends and all-synthetic-fiber blends

Two Methods for SOLVENT DYEING Acetate

• Dyeing acetate in an alcohol or acid bath with acid or soluble vat dyestuffs presents its problems, but the result is a faster color than that produced by dispersed acetate dyestuffs.

WHILE A VERY SMALL PROPORTION of acetate sold is solvent dyed, there has been an increased interest in this type of dyeing within the last year or two.

Acetate yarns or fabrics can be dyed with faster classes of dyestuffs than dispersed acetate dyestuffs if a chemical is used that swells the fiber. In choosing a swelling agent, the dyer must consider many factors, including ability to dissolve dyestuffs, toxicity, flammability, availability, cost, and color performance.

Two general solvent techniques for dyeing acetate are of current interest: one employs an alcohol system; the other uses an acid system as set forth in the Galatioto patents.

In the alcohol system, a high concentration of alcohol in water, with or without the addition of another swelling agent such as sodium thiocyanate, is used. With this system, there is a mechanical absorption of the bath without exhaustion of the dyestuffs. The swelling and dyeing of the yarn is almost instantaneous at room temperature.

In the acid system, a mixture of organic acids and sometimes mineral acid, with or without additions of organic solvents, is used. The mixed-acid system depends on controlled swelling of the yarn and exhaustion of the color from the dyebath, the control being partly obtained by moderate increases in temperature.

Good and Bad Points

With selected dispersed acetate dyestuffs, it is possible to obtain a range of shades fast in practically all respects. The one weakness of full shades is poor fastness to washing, perspiration, or sea-water bleeding.

Solvent dyeing in itself does not correct this condition. The application of dispersed acetate dyestuffs to acetate by a solvent technique causes no fastness improvement over the same dyes applied in the conventional manner. However, by using selected acid dyestuffs or solubilized vats in medium and full shades, the dyer can obtain wetfastness properties far superior to those obtained by direct acetate dyes. This technique has been used for many years by yarn dyers on effect threads for worsteds or hosiery clocking able to stand cross dyeing.

Solvent Dyeing Adds Color Flexibility

While solution-dyed acetate colors give adequate wetfastness, solvent dyeing permits a wider range of colors and gives added flexibility. For example, dyers of acetate swim-wear fabrics have found that the use of both solution-dyed and solvent-dyed acetate fabric is to their advantage. By the use of solvent-dyed acetate, they get a broader range of reasonably wetfast colors than is possible by the use of solution-dyed fabrics alone. They use the solution-dyed yarns for the darker shades and fill the lighter shades with solvent-dyed colors.

Technique Presents Problems

As with all relatively new and untried procedures, there are many problems in using the solvent-dyeing technique on acetate. The alcohol system uses a 70 to 80% solution of alcohol in water and thus presents a fire hazard. The acid system produces objectionable fumes and requires the use of protective clothing and masks, along with adequate ventilation. For economic reasons, it is necessary to conserve the solvent; therefore, solvent-storage and -recovery systems are required to keep costs at a minmum.

There may be considerable variation in dye pickup between yarns.

Based on a paper presented by Paul Duggan

Yarns that appear perfectly uniform when dyed with dispersed dyestuffs may show distinct variations when dyed with acid or vat dyestuffs.

In a solvent system, the acetate yarn must swell in order to accept the classes of dyestuffs for which it does not have a normal affinity. Great care is required to prevent the fiber being damaged while in the swollen state, or permanent distortion will result. Therefore, more care is necessary in handling yarns or fabrics during solvent dyeing than during conventional dyeing.

Because the acid method controls the swelling that depends partly on heat, it lends itself to jig application for piece goods.

Piece dyeing by the alcohol system can best be done on a range consisting of a pad followed by wash boxes. The fabric to be padded must have a uniform moisture content. This uniformity is best obtained by running the fabric over drying cans, with the last two cans water cooled, just prior to padding.

Although the solvent dyeing of piece goods containing acetate requires meticulous care, it is a possible way of getting better fastness properties on acetate than those produced by normal dispersed dyestuffs.

Tips on FINISHING SYNTHETICS

- **Finishers must understand setting principles**
- **Dacron pilling can be reduced**
- **Properly pleated Acrilan-viscose blends withstand hand washing**

Nylon

In heat-set nylon, internal stresses are released and fibers tend to assume the structural arrangement under which they were set. The setting temperature, the setting time, and the type of machine used can be determined only by the finisher's experience.

Nylon can be set in the raw state or after being scoured, dyed, or finished.

The following are several important factors that must be observed in setting nylon:

1. Accurate control of all setting conditions, such as time and temperature.

2. Uniform setting conditions for all parts of the fabric.

3. Fabric smooth and free of wrinkles during setting. (Wrinkles that are set are not usually removed even by additional more-severe setting.)

4. Avoid excessive time at high temperatures. (Discoloration, loss of strength, and degradation of the material takes place in an overheated fabric.)

Setting is a relative term when applied to nylon, which is never absolutely set. Any temperature higher than the temperature at which the nylon was set will reset the fabric. The limiting point is where the nylon becomes damaged from excessive heat.

It is known that urea and melamine-formaldehyde resins, when applied to rayon in the monomeric form with an acid catalyst, penetrate the fiber and become polymerized when cured. Although the resins add weight and impart crease resistance, they do not stiffen the rayon fabric. However, when these resins are applied to a hydrophobic fiber like nylon, they cannot penetrate the fiber. The resin polymerizes on the surface, imparting a crisp handle.

There are nonslip finishes and soft finishes applied to nylon. Generally, the nonslip finishes do not penetrate the fabric but bind the yarns, restricting their motion. This binding, naturally, results in an increase in firmness of handle. The very soft finishes, on the other hand, lubricate the junction points, permitting the fibers to slide over each other more freely. The most common types of softeners used on nylon are cationic in nature.

Dacron

Among the outstanding characteristics of properly constructed and properly finished fabrics of Dacron are wrinkle resistance and shape retention. Dacron has good abrasion resistance, high flex life, high strength, and rapid drying.

Proper heat setting of filament-Dacron fabrics is even more important than the heat setting of nylon. Many filament-Dacron fabrics, set or unset, show little or no shrinkage when washed; however, when it is ironed, an unset fabric shrinks greatly.

We have established a procedure of subjecting all fabrics made of filament Dacron, after they have been heat set, to temperatures of 350° F. Thus, we can be reasonably certain that the manufacturer and consumer will have no trouble with shrinkage by ironing.

The problems of static electricity are not new, but interest has become greater since the introduction of the new hydrophobic fibers. The best way to prevent static on Dacron is to apply a finish that causes electric charges to leave the surface so rapidly that no charge accumulates. However, no antistatic agent completely durable on Dacron has been developed.

A certain complex organic cationic compound that shows exceptionally good resistance to laundering with soap solution is promising as a Dacron antistatic finish. However, laundering solutions containing synthetic detergents cause a considerable decrease in the antistatic effect. When the fabric is laundered again with soap solution, the original antistatic effectiveness is restored.

Pilling of Dacron

Pilling of spun Dacron is a problem that has been given a great deal of study. Pilling is the balling up of fibers that protrude through the sur-

Based on a paper presented by Harry Moore

face of the fabric. Wool has a tendency to pill; but instead of remaining in small, hard balls, the pilled spots wear away or break off. Probably its greater abrasion resistance and strength cause Dacron to retain the pilled effect.

Pilling of Dacron can be reduced, and in some cases eliminated; but it must be done with care, or a harsh hand will result. In some cases, it may be necessary for the finisher to compromise somewhere between pilling and harsh handle.

Pilling elimination makes necessary the proper selection of yarn and the proper construction of cloth. For example, plied yarns are reported to give better pill resistance than single yarns; increased twist and tighter weaves also improve pill resistance.

In the finishing process, brushing, shearing, and singeing appear to de-

CONTINUED ON PAGE 166

How To Dye WOOL-SYNTHETICS BLENDS

- **Dye carrier must have limited volatility**
- **Fastness varies in different percentages of Dacron-wool blends dyed with the same formulation**
- **Cationic dyeing assistant helps produce solid shades fast to light and washing on Acrilan-wool blends**

Silk-Wool

Production of wool-silk blends appears to be increasing. Dyers, however, have encountered some difficulties in the production of solid shades and have found that older recommendations are not satisfactory.

An investigation of a 60-40 wool-silk blend showed that heaviest dyeings are obtained on the silk from a neutral bath in the presence of 30% common salt (owf).

Sodium sulfate, if used in place of salt, causes the silk to be dyed distinctly weaker. With less salt, the depth on the silk decreases and the wool absorbs more dyestuff. A number of dyestuffs have so strong an affinity for silk that they are not readily transferred to wool even when acetic acid is added to the bath. The dyer, however, can fill up the wool by adding more dyestuff in the presence of 1 to 3% of acetic acid (28%) or 3 to 5% of ammonium sulfate or by using another dyestuff with more affinity for wool than for silk.

Nylon-Wool

No single group of dyes can be recommended for all depths of shade. In weaker shades, the nylon usually absorbs most of the dye before the temperature is high enough for the wool to be dyed. In heavy shades, the opposite occurs. Retarding agents such as Palatine Fast Salt N Conc. Powder, Prestabit Oil V, and Nylon Resist GDC are useful in dyeing weaker shades.

The production of heavy shades used to be difficult because not enough dyestuffs of low sulfonation were available. The new premetallized neutral-dyeing types, such as the Supralans, solve this problem. Unlike other acid dyestuffs, the Supralans have free sulfonic acid groups that are blocked, and no selective absportion occurs on nylon. Since the dyestuffs are fast on both nylon and wool, they can be used for dark shades alone or in combination with other similar-acting dyestuffs. They can also be used for filling up the nylon when it is lighter than the wool.

Dacron-Wool

A few successful runs were made on 85-15 wool-Dacron tops. The tops were wet out at 120° F.; and 20% monochlorobenzene (owf), which had been emulsified with 0.5% Monopol Oil 48, was added. After 10 mins., selected disperse acetate dyestuffs were introduced. The temperature of the bath was raised to 180 to 190° F. and kept there for 30 mins.

When monochlorobenzene is used in dyeing Dacron, the dyeing temperature should not exceed 190° F. to avoid evaporation of the carrier. After the Dacron is dyed, the temperature should be raised to 205 to 210° F. and kept at that temperature 15 to 20 mins. During this time, the monochlorobenzene is removed by steam distillation. The dyer should then drop the bath and rinse the tops before the wool is dyed with monochrome dyestuffs. The wool, stained very little in the presence of monochlorobenzene, can be cleared completely by topping with Helindons.

Although clorinated benzenes are poisonous to a certain extent, one well-ventilated dyehouse has dyed many thousands of pounds of Dacron without any complaint. Monochlorobenzene can be used only when the material stays under the liquor during the entire dyeing cycle. The carrier has a high affinity for Dacron, and dispersed dyes concentrate in this solvent and surround the fiber with a concentrated solution that speeds the rate of diffusion.

Certain vat dyestuffs produce fluorescent shades on Dacron dyed in the presence of monochlorobenzene.

Dye Carrier Must Have Limited Volatility

Only a carrier of very limited volatility is of value in dyeing piece goods.

A good method, developed at Textile Aniline & Chemical Co., utilizes diammonium phosphate and Dowicide A. The DAP plays a two-fold role. Unlike acetic acid, it forms a finely dispersed precipitation of the ortho-phenyl-phenol; and being alkaline, it minimizes the staining of the wool with Celliton colors.

The dyebath is prepared with 2.5 lbs. of DAP per 100 gals. of liquor, and the Dacron-wool blend is run through for about 10 mins. Meanwhile, the dyebath temperature is gradually brought up to 130° F.; and several more portions of DAP (2.5 lbs. per 100 gals.) are added. The dyestuff is added at 130° F., and then the temperature is raised to the boiling point. Some mills, however, prefer a temperature of 200° F. when the dyestuff is added.

For a fine dispersion of ortho-phenyl-phenol, several dyeing assistants, including Tetropol, have been recommended. The optimum quantity of Tetropol is 1½ to 2 lbs. per 100 gals.

Fastness properties vary to some extent in different blend percentages dyed with the same formulation. One dye, for instance, had perfect fastness to acid perspiration in a 50-50 Dacron-wool construction; while a 25-75 Dacron-wool blend dyed with the same formulation bled in the same test. However, passing the fabric through a dry-cleaning fluid eliminated the bleeding. The Derby dry-

Based on a paper presented by H. Luttringhaus

cleaning unit should be of great help in dyeing Dacron-wool blends.

Simplified Dyeing Method For Navy Blues

It is particularly difficult to obtain good fastness properties for dark blues and browns, and it takes about 12 hrs. to complete such a dyeing on a Dacron-wool blend. These dyeings cannot be made by a one-bath method, since much of the dispersed Cellitons is absorbed by the wool, with resulting poor wetfastness.

In most cases, the Dacron is dyed first and then the wool is covered with chrome dyestuffs. Much time is taken in intermediate or subsequent scouring to remove superfluous disperse color from the wool. To simplify the method and to obtain good fastness properties at the same time, the use of Algosols is recommended. When these leucoesters of vat dyestuffs are dyed on wool in the presence of Rongalite, the Algosol exhausts on the wool; at the same time, the disperse color is removed.

Orlon 42-Wool

In dyeing Orlon 42-wool blends, a one-bath method is recommended. However, basic dyes have to be mixed with acid or chrome dyes; and since they may form precipitates, something to prevent precipitation must be added. A nonionic surfactant such as Emulphor ON has been recommended and used with success. Too, the cation-active product, Peregal TW, usually used for dyeing tippy wool, not only prevents precipitation but also improves the penetration in hard worsted fabrics.

Fastness in men's-wear fabrics can be obtained in one-bath treatment in which 2% Peregal TW and Monochrome Mordant with chrome dyestuffs and Genacryl dyes are used.

Since the Genacryl Blue brands stain wool considerably and the basic blues are not fast on wool, it is essential to dye the Orlon first, clear the wool in an intermediate step, and dye the wool in a separate operation.

Acrilan-Wool

Blends of 50% Acrilan and 50% wool have been dyed to solid shades with Palatine fast dyestuffs, 6% of a cationic assistant, and redispersing agent such as Emulphor ON. The cationic assistant is said to increase the affinity of the dye for Acrilan enough to produce solid shades that are fast to light and washing.

In another method, the Acrilan is dyed with Cellitons for 2 hrs. at 205° F. The disperse color migrates gradually on the Acrilan and leaves the wool slightly stained. The wool is then brought up to shades with acid dyestuffs, and material fast enough for women's wear is obtained.

Dynel-Wool

In one dyeing procedure for a Dynel-wool blend containing 75% Dynel, the material is first scoured at 160° F. with Calgon and a surfactant. Dyeing is carried out with 6 oz. of sodium sulfate and 1% Peregal TW in a mixture of disperse dyestuffs and neutral-dyeing metallized types.

Dyeing is started at 100° F. at a pH of 7.5, the disperse dyes are added with Peregal TW, and then the metallized dyes are added. The bath temperature is brought up to 210° F., and the fabric is run for ½ hr. Sodium sulfate is then added; dyeing is continued at the boiling point for 1 hr.

After being dyed, the material is scoured at 160° F. for 20 mins. with a surfactant, Calgon, and soda ash at a pH of 7.2. A small amount of tannic acid should be added to the last rinse bath.

How To Dye Blends of CELLULOSIC and NONCELLULOSIC FIBERS

- **Relustering of Dynel causes increased color depth as drying temperatures increase**
- **A one-bath dyeing method is not necessarily less expensive than a two-bath method in union dyeing Dacron blends**
- **Acrilan blends are dyeable by conventional methods**

Dynel

No more than 30 to 35% of Dynel should be used in a blend with rayon or acetate. Dynel is sensitive to processing temperatures of 240 to 250° F.; unless restricted by tension, it will shrink and produce a firming of hand.

In the early stages of Dynel dyeing and finishing, this property presented a severe difficulty. However, some authorities now believe that this fiber shrinkage in recommended blends can be used to advantage. As a result of such shrinkage, the Dynel component shrinks away from the outside of the fabric toward the center and becomes part of a basic inner structure that imparts the desirable properties of Dynel fiber, such as crease retention, wrinkle resistance, drape, etc.

Mechanical processing can break down the initial firmness of hand caused by shrinkage. The dyer and finisher may establish this shrinkage by heat treatment before dyeing and, in dyeing, eliminate the set hand while preserving the value of the Dynel at the core of the fiber. Treated in this way, the goods are less liable to firm up in a resin finishing operation carried out by normal means.

Based on a paper presented by W. H. Hindle

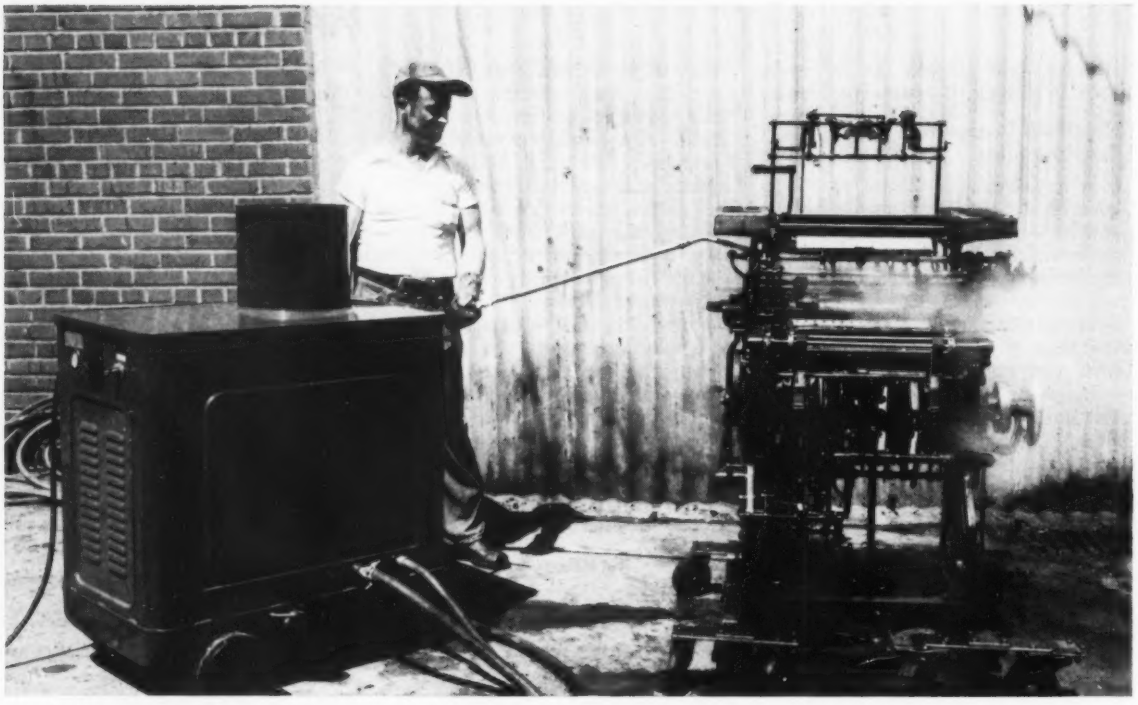
Wide Range of Shades Available

The dyer can obtain a wide range of union shades in a single bath method by using regular rayon and selected dispersed acetate dyestuffs. Maximum color yield from the dispersed acetate dyestuffs make temperatures in excess of 205° F. necessary.

Neutral-dyeing premetallized dyestuffs in conjunction with rayon dyestuffs also provide a single bath for dyeing Dynel-rayon blends. The lightfastness here is, in general, superior to that obtained with dispersed dyestuffs. However, the neutral-dyeing premetallized dyestuffs without the use of a carrier system have a limited shade-build-up power; but the carrier can affect the direct colors on the rayon component.

A wide range of acid dyestuffs is

CONTINUED ON PAGE 173



CLEANING UNIT, heated by oil, consumes 120 gals. of water per hour. A good cleaning vapor is made by mixing 8 gals. of detergent with the water.

How Dexdale STEAM CLEANS Knitting Machines in 45 Mins.

▶ **Knitting troubles are reduced when size, oil, lint, and dirt are removed from sinkers, jacks, and sinker heads**

▶ **The 45- and 66-gauge hosiery machines are kept like new machines with a steam-cleaning unit**

By JAMES H. BLORE, Assistant Editor, TEXTILE WORLD

A NEW METHOD OF cleaning knitting machines has been devised by Dexdale Hosiery Mills, Lansdale, Pa. The Wildman full-fashioned machines are taken from the production line and thoroughly cleaned, and they are back on the production line in less than 2 hrs.

To make handling easier, 8 or 10 machines are removed from the knitting room at one time; and two men are assigned to the cleaning job. One man sometimes does the job when a few machines are to be cleaned.

Needle Bars Can Be Removed

The needle bar is sometimes removed and the needles straightened while the machines are being cleaned, but leaving the needle bars on the machine does them no harm.

The machines are lifted onto a mill-made dolly so they can be easily handled during cleaning. The dolly is made from two pieces of channel iron supported on eight casters.

The cleaning job is done with a Spontane steam cleaner. The unit is mobile, and cleaning is generally done in the mill yard to allow the condensed steam to drain away.

Water is fed to the unit from a hose attached to an outside spigot, and water consumption is about 120 gals. per hr.

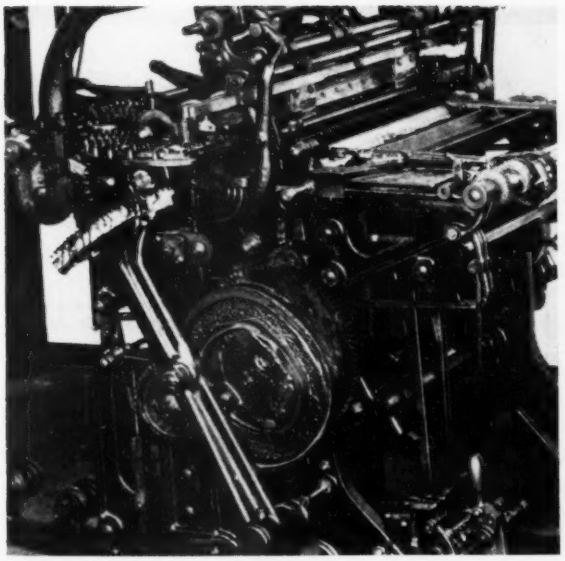
Detergent Aids Cleaning

A detergent, Oakite 92, is used with the steam to make a satisfactory cleaning vapor. The best ratio of the cleaning mixture is 8 gals. of detergent to 120 gals. of water. The detergent is fed to a tank, and the mixture is controlled with a float valve.

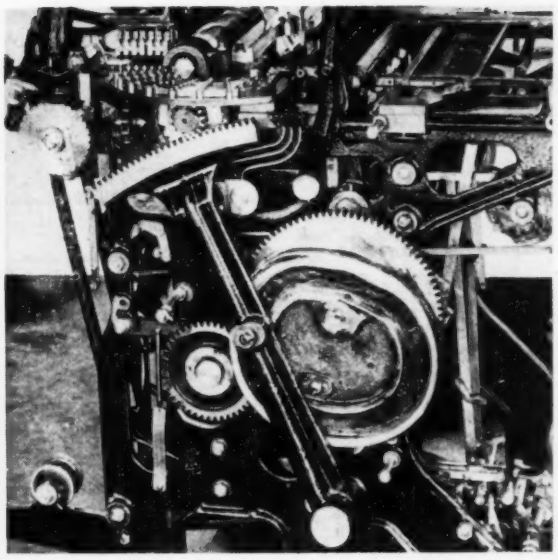
The water pumps are operated from a ⅓-hp. motor that is powered from an extension cord plugged into the 110-v. supply.

Because the water is pumped around the coils in the oil heater, the water is preheated and the unit is ready to start cleaning in 45 secs.

Steam pressure does the best job at 80 to 90 psi. A pressure-control valve



BEFORE CLEANING, this Wildman hosiery machine was giving some trouble with sticky sinkers, jacks, and carrier bands.



AFTER CLEANING, the same machine looks like new. Clean fabric is knitted immediately because oil, dirt, size, and lint have been removed.

stops the machine if the pressure exceeds 100 psi. The steam jet is directed at the machine, and a long nozzle allows inaccessible parts to be thoroughly cleaned. All congealed oil, grease, size, lint, and dirt are loosened and washed away.

After 30 or 40 mins. of cleaning, the machine is allowed to drain. Then it is dry-steam cleaned for about 5 mins. The dry steam is taken from the mill's supply and used to remove excess water and detergent.

Protective Oil Is Sprayed

After dry-steam cleaning, the machine is sprayed with Oakite protective oil. This oil is atomized and applied with a paint spray gun to (1) drive out any remaining moisture, (2) provide a protective coating, and (3) prevent corrosion.

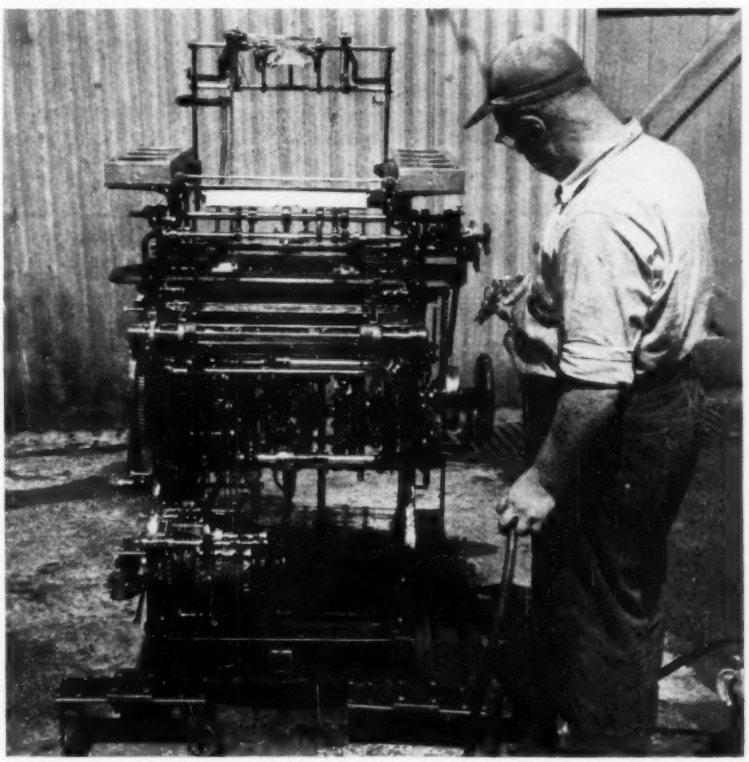
The machine is now ready to go back into the production line. The machine on the dolly is pushed to the lineshaft and lifted off the dolly. After the machine has been leveled, the belt is looped around the driving pulley.

All oil holes on heavy bearings and rollers are lubricated with SAE 30 oil. SAE 10 oil is used for clawkers, band rollers, and other light parts. The jacks and sinkers are lubricated with needle oil.

Clean Fabric Made Immediately

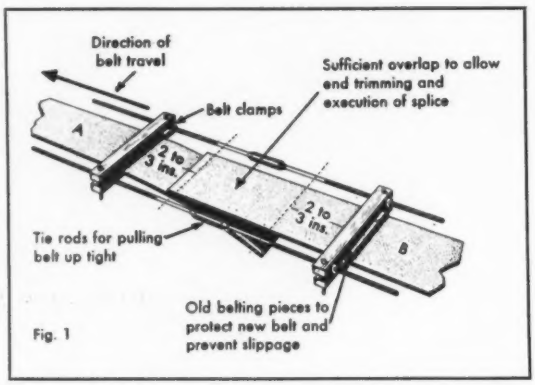
The points, sinkers, and needles are indexed; and the machine is run for 10 mins. The yarn is placed on the machine and threaded up. Knitting is started. Needle breakage after cleaning is negligible, and the fabric is quite clean because all dirt has been removed from the sinkers and sinker slots.

Because accumulated size, lint, dirt, and oil have been removed from the jacks, sinkers, and carrier bands, all these parts work better, fabric quality is improved, and knitter troubles are fewer.

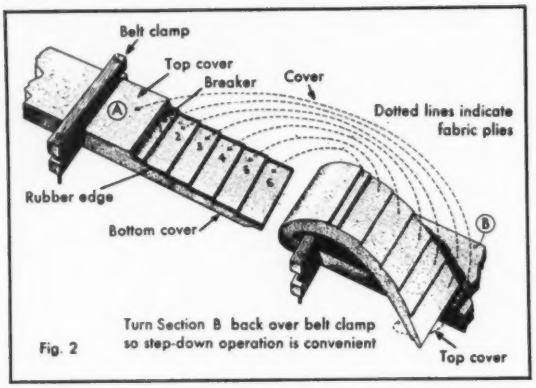


OIL IS SPRAYED on the machine after dry-steam cleaning to form a protective coating and a corrosive resistant. Spraying is done with a paint spray gun.

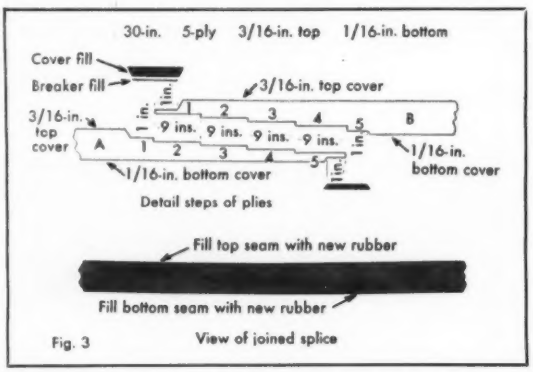
How To Splice CONVEYOR


Direction of belt travel
Sufficient overlap to allow end trimming and execution of splice
Belt clamps
A
2 to 3 ins.
2 to 3 ins.
B
Tie rods for pulling belt up tight
Old belting pieces to protect new belt and prevent slippage
Fig. 1

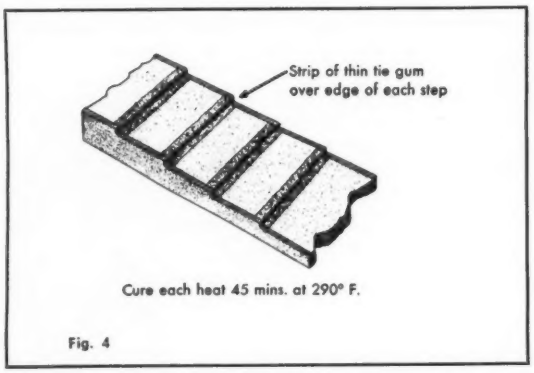
TIE RODS fastened to belt clamps pull the two ends of the belt into the correct position to make the splices.



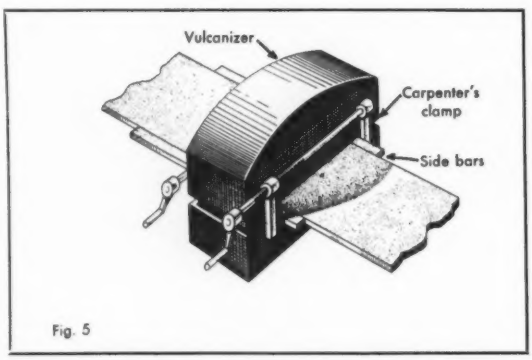
SPLICES are cut on the A section of the belt. Then Section B is cut to match Section A step for step.



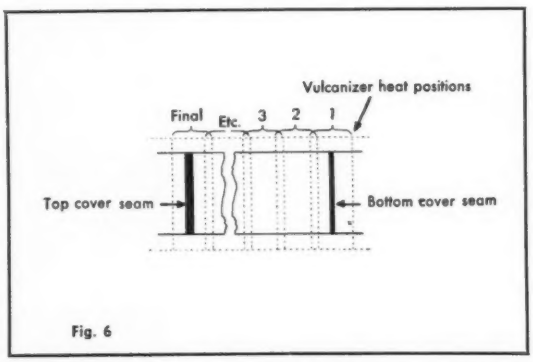
PLIES must fit perfectly before they are cemented. Use coarse emery cloth to roughen the surfaces so that cement will stick.



TIE GUM, 1 to 2 ins. wide, is placed on the edges of each step after the steps have been cemented. Curing time is 45 mins.



THE BELT is held firmly in place in the vulcanizer with carpenter's clamps against steel rods the same thickness as the belt.



VULCANIZING starts with overlapping the bottom- and top-cover seam 3 ins. Each heat overlaps the preceding heat by 2 ins.

BELTS in the Mill

▶ The equipment used to splice conveyor belts in the belting shop usually isn't adaptable for splicing belts at machines in the mill. Use the following tools and methods, and your belts will last longer.

By A. F. MATHEIS, Thermoid Co.

CAREFUL ATTENTION TO conveyor-belt splices adds to belt life and prevents failures. Methods for making splices at machines in a plant are different from the methods used in a central belt shop.

Consider the service you expect a belt to endure, and select the splice you need. Don't pick a light-duty splice for a heavy-duty application. Remember that the splice is always a danger point.

Assemble Tools in a Good Spot

Once the belt splice is decided on, follow these steps:

Mount the roll of belting on a strong stand at the point of installation. Unwind the belt from the top of the roll. Be sure the correct size will be carrying the load when the belt is spliced. Some manufacturers mark the belt to indicate the direction of forward travel.

Slacken the take-up mechanism as far as it will go to allow for belt stretch later.

Select the best floor location to make the splice. Consider sufficient head room and elbowroom, light, safety, ventilation, and dryness. Remove enough belt carriers at the place selected to make room for the auxiliary equipment required.

If a light-duty belt is being installed, the ends can be pulled together with a block and tackle fastened through holes punched 3 ins. from each end of the belt.

A heavy-duty belt requires a bolted clamp on the belt to fasten the block and tackle. Bring the ends of the belt together slowly, and constantly check all points to be sure the belt is not snagged, creased, or damaged.

Pull the belt together until there is enough overlap of the ends to cut off the holes punched to fasten the block and tackle. Apply the bolted clamps 3 ft. from one end of the belt and as far as the belt reaches on the other end. Place strips of old belting between the clamps and the belt to protect the belt surface. This practice also keeps the clamps from slipping. Tighten the clamp tie rods to remove all slack from the belt.

Be Careful With Stripping

Be sure the belt is dry before any cutting for splicing is done. It is particularly important to eliminate moisture and foreign material when joints are vulcanized. Use an infrared lamp or other similar heating unit if moisture is present. Do not heat above 250° F.

Position the belt ends so that the forward-moving end (Section A, Fig. 1) is beneath the other end. The splices cut from Section A are developed from the top downward so that when the splice is completed and the belt is in operation, the whole splice will pass over the pulleys before the seam. This progressive support as the belt goes over the pulleys will prevent both fraying and concentrated stress.

First, strip the top cover off in Section A as shown in Fig. 2. Then peel off each cover step by step throughout the belt. The work is done from the top downward through the belt to permit the most accessible working conditions.

In tearing the steps down, be careful not to cut into the fabric ply below the one being removed for each step.

The best procedure for ripping off steps is to turn back 1 to 2 ins. across the belt of the ply being removed and cut nicks in this turned-back edge every 2 ins. Then use pliers to grab each 2-in. strip and tear it free for the distance required for the removal of the entire ply.

Rubber should be removed in similar strips. It will not rip but must be cut progressively with a knife.

Mark Section B, as shown in Fig. 2, so that the end matches with the first or top ply of the splice contact at Section A. Then turn Section B back over the belt clamp and start the stripping-down operation from the exposed side. Since Section B is turned back upon itself, the stripping operation is done by removing the back cover and working up through the plies to the top cover.

Prepare the Stripped Surfaces

After Sections A and B have been stepped down, the next operation is the preparation of the surfaces to be joined. The operation is:

1. Scrape the steps of each end of the belt with coarse emery cloth. Cut the edges of the covers to match. Clean all surfaces thoroughly with carbon tetrachloride.
2. Be sure the fabric plies are dry.
3. Cement all steps of Sections A and B. Allow the cement to dry thoroughly; then apply a second coat.
4. After the cement has dried, place 1- to 2-in. strips of thin tie gum over the edge of each step. (See Fig. 4.)
5. Join the two splices. Be sure all surfaces and abutting edges are aligned. Be careful that no air is trapped between Sections A and B during this operation.
6. If a breaker is present, set a 4-in. strip of breaker against the edges of the stepped-back breaker in Sections A and B. Cement and let dry.
7. Fill the space remaining between the covers with stock. Skive the exposed joining edges. Cement the edges of the belt, and apply a thin strip of cover stock over the exposed seam.

Vulcanize Belts at 280° F.

The number of heats necessary to vulcanize a belt depends on the size of the vulcanizer and the length of the splice. The curing time varies from 30 mins. at 280° F., depending on the type of belt, number of plies, etc. (See Fig. 3).

The first heat should overlap the bottom seam by approximately 3 ins., and each following heat should overlap the preceding heat by 2 ins. The final heat should overlap the top cover by 3 ins.

In setting up the vulcanizer, metal side bars the same thickness as the belt must be used to confine the edges during the curing period. Carpenter's clamps should be used on both sides of the vulcanizer to control the position of the side bars.

After the splice is vulcanized, trim excess rubber off the edges.

The success of a field splice is largely dependent on good workmanship, care, and precision; consequently, these factors should receive prime attention.

ACCEPTANCE SAMPLING PLAN
Protects Both Supplier and User

► Supplies that are purchased by the lot can be controlled with an acceptance sampling plan if you know your desired quality levels and risks. A yarn-strength example shows how such a plan is selected and applied.

By ROBERT R. JONES
Bigelow-Sanford Carpet Co., Inc.

Table I
Sample Sizes and Reject-Limit Factors

Acceptable-quality level (%)	Unacceptable-quality level (%)	Sample size	Reject-limit factor
(1)	2	389	2.173
	5	54	1.953
	(10)	(21)	(1.764)
2	5	138	1.825
	8	50	1.697
	10	34	1.629
5	10	133	1.441
	15	44	1.312
	20	24	1.205

THIS TABLE gives the sample size and reject limit in standard-deviation multipliers. The values for the problem in this article are circled. Textile mills don't work with narrow quality-control limits; so large sample sizes and reject-limit factors are not necessary.

Actual Results From This Plan

Four lots of 10/3 yarn were received and tested in accordance with this plan. The results:

1. Lot Number	326	335	474	507
2. Date received	1-10	1-15	2-4	2-27
3. Number of tensile-strength tests	21	21	21	21
4. Average breaking strength (lbs.)	6.45	6.56	6.27	6.16
5. Standard deviation (lbs.)	.69	.50	.44	.76
6. 1.764 X standard deviation (lbs.)	1.22	.88	.78	1.34
7. Minimum specification (lbs.)	5.2	5.2	5.2	5.2
8. Average − (1.764 X S.D.) (lbs.)	5.23	5.68	5.49	4.72
9. Minimum specification + (1.764 X S.D.) (lbs.)	6.42	6.08	5.98	6.54
10. Decision	Accept	Accept	Accept	Reject

The decision to accept or reject the yarn lots is based on the actual figures. The average breaking strength of a lot must be at least 1.764 (from Table I) times its own standard deviation above the minimum specification for the lot to be accepted. The comparison can be made in two ways: (1) The values in Line 8 can be compared to the standard value of 5.2 (Line 7); a lot is rejected if the value in Line 8 is below the minimum specification. (2) The values in Line 9 can be compared to average breaking strengths (Line 4); a lot is rejected if the average breaking strength is not as great as the value in Line 9.

INCOMING LOTS OF purchased yarn can be controlled by statistical quality-control methods as part of an acceptance-inspection plan. The sampling plan must give assurance to the yarn supplier and the yarn user that both are protected against losses from inaccurate classification.

What You Have To Know Before You Select a Sampling Plan

The best way to explain the problem of controlling yarn shipments for tensile-strength requirements is to present an actual problem. The problem:

A weaving mill uses a 10/3 special-blend cotton yarn. The minimum tensile-strength requirement for the yarn is 5.2 lbs. for a conventional single-strand break. The yarn is to be bought from a new supplier.

Several questions have to be answered before a sound sampling plan can be set up.

1. *What is the definitely acceptable quality level?*

Past experience in this mill has shown that lots with 1% or less of the tensile-strength tests below 5.2 lbs. perform well in beaming and weaving. With this experience in mind, 1% is selected as the acceptable-quality level for the yarn.

2. *What is the definitely unacceptable quality level?*

Experience in this mill has also shown that a poor lot is definitely indicated if 10% of the test breaks are below 5.2 lbs. With this evidence in mind, 10% is selected as the unacceptable-quality level (also called the lot tolerance).

3. *What chance should there be that a good lot will be rejected by the acceptance plan?*

Common practice in quality control sets the producer's risk at 5%. This risk is the chance of rejecting a lot that is actually at the acceptable-quality level. Suppose, for example, that a large number of lots of cotton yarn were submitted for inspection and that all of these just happened to be at the acceptable-quality level (1% of the potential tensile-strength breaks would be below 5.2 lbs.). The sampling plan to be established should

Based on a paper presented at an ASTM meeting.

accept 95% of the lots and reject 5% of them. If 1,000 lots were reviewed, you would expect 950 to pass the inspection and 50 to fail.

4. *What chance should there be that a bad lot will be accepted by the acceptance plan?*

The generally used consumer's risk is 10%. This risk is the chance of accepting a lot that is actually at the unacceptable-quality level. If all of the 1,000 lots were exactly at the unacceptable-quality level (10% of the breaks would be below 5.2 lbs.), 100 lots should pass and 900 should fail.

5. *What happens to the lots throughout the possible quality range?*

The chance of a yarn lot being accepted should be in relation to the quality of the lot. Clearly, a lot with 0% of breaks below the specification minimum should be accepted 100% of the time; also, a lot that could not produce a satisfactory strength test should be rejected 100% of the time. Lots of quality between the acceptable- and the unacceptable-quality levels should be accepted a greater proportion of the time as they approach the acceptable-quality level. As a lot approaches the unacceptable-quality level, its chance of being accepted approaches the 10% consumer's risk.

Here's the Sampling Plan Selected for This Problem

There are several acceptance-inspection plans that could cover the conditions of this problem. However, a relatively new plan* was selected as especially suitable.

This variables plan recognizes that the average level and the variation about the average are unknown when a lot is received. This situation is especially true when a new supplier is involved.

The plan calls for selection of two items: (1) the sample size (number of tensile tests to be made), and (2) the allowable limit for the sample average. This information is found in a table of sample sizes and limit factors for various quality levels (Table I). This table shows that the conditions of this problem require 21 tensile-strength tests from the lot and require the lot average to be 1.764 standard deviations or greater above the minimum specifications.

In actual use, the standard deviation is a measure of variation; and the larger the deviation around the average, the higher the average must be to meet the minimum tensile-strength requirements.

* Wallis, W. Allen, "Use of Variables in Acceptance Inspection for Percent Defective," *Selected Techniques of Statistical Analysis*, McGraw-Hill Book Co., Inc., New York, 1947.

How To Take and Test Samples

The samples to be tested must be selected at random from the lot under review. For this reason, the samples should be chosen from as many different bales or cartons as can be covered. No more than one sample should be taken from each carton unless there are less than 21 cartons. Precautions should be taken to mix the cartons selected to avoid concentrating the sample. Frequently, cartons are numbered in sequence of production by the vendor, and the numbers can be used as a guide to systematically randomize the selection of samples.

Standard test procedures must be followed at all times. Testing routines of Committee D-13 of ASTM should be followed. One tensile test per sample is required for the inspection plan described here. A plan can be set up to allow more than one break per sample, but the mathematics of the problem are more complicated. The simpler approach is preferred.

Advantages of the Plan

This acceptance-inspection plan definitely pins down the protection offered to both purchaser and supplier, and it clearly establishes the quality levels that are required for acceptable and unacceptable lots. Like all systematic plans based on probability theory, the plan eliminates guesswork. Relatively unskilled employees can carry out the inspection procedure once it has been established, and supervisors are relieved of the details of routine testing. The acceptance inspection of shipments from new sources is possible without building up a backlog of data, because the results are based on data actually accumulated for each lot.

Limitations of the Plan

Chief assumption in the acceptance plan is that the quality characteristic follows the normal distribution curve. This assumption can be verified through analysis of the data with standard statistical techniques. If the normal distribution is not followed but if the characteristic has a consistent pattern, the sampling plan here will give consistent protection from shipment to shipment but at a different level from the present plan. Most characteristics that do not follow the normal distribution curve are close enough to permit this approach to work. As a rule, the inspector is interested in distinguishing between quality levels that are relatively far apart. This example had levels of 1% and 10% defective in mind.

Plan Has Other Uses

Any measurable characteristic tested on a group or lot basis can be evaluated through this plan. Coverage at different quality levels can be found in Table II. The conventional 5% producer and 10% consumer risks are associated with this plan. A maximum specification can be controlled by subtracting from the specification instead of adding to it.

FORMULAS FOR SAMPLING PLAN

Reject-Limit Factor

The reject-limit-factor formula depends on the number of standard deviations associated with the risks and quality levels desired. These values come from Table II, which is at the bottom of this page.

$$k = \frac{k_p k_u + k_c k_a}{k_p + k_c}$$

Where

(1) k_p = number of standard deviations beyond which p of the occurrences are found in the normal curve

p = producer's risk = 5%

Hence k_p = 1.64 from Table II

(2) k_c = number of standard deviations associated with c, the consumer's risk

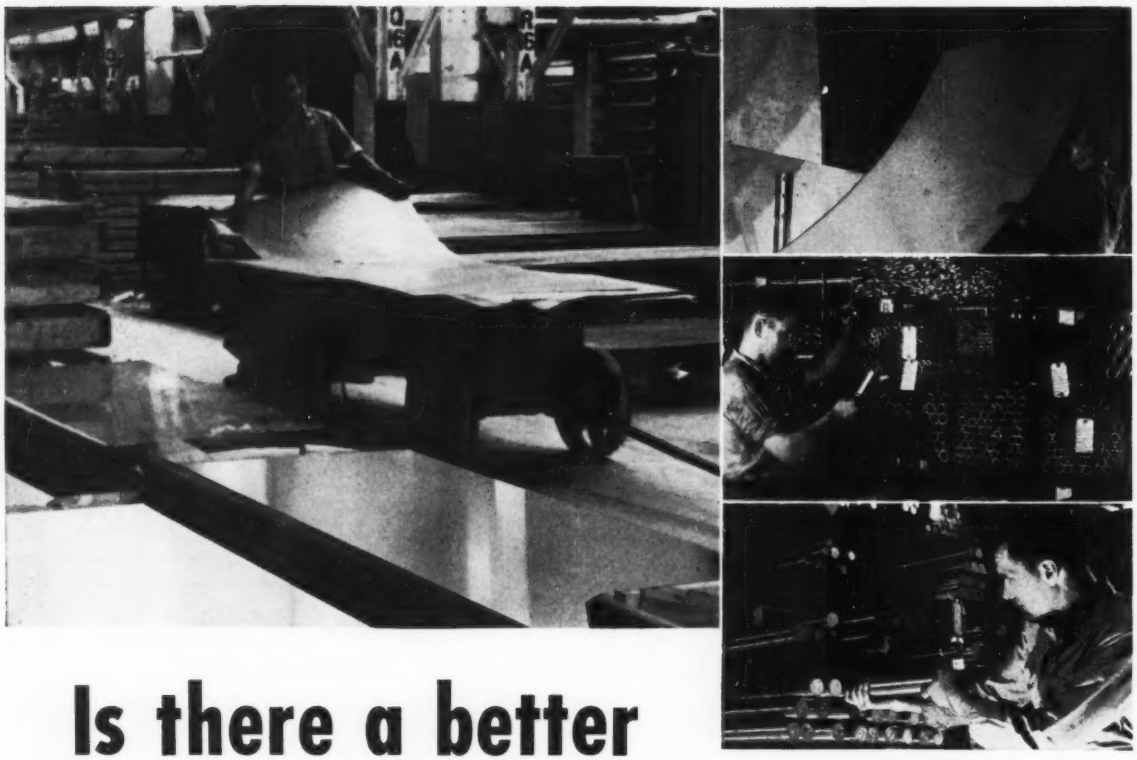
c = 10%

k_c = 1.28

CONTINUED ON PAGE 140

Table II

k = Number of standard deviations from average	Percentage of occurrences between average and limit	Percentage beyond limit
1.28	40	10
1.64	45	5
1.75	46	4
1.88	47	3
2.05	48	2
2.33	49	1
2.58	49.5	.5



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So much improvement is being made every day in stainless. New extra-low carbon sheets and plates for special welding requirements, light plates for polishing and stainless tubing to name but a few. You may not be using the exact type that is best from a fabrication, long life or cost standpoint.

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TYPES: 301, 302, 303-C, 303-S, 304, 304-L, 309, 310, 316, 321, 405, 410, 416, 430, 430-F, 440-C

CONDITIONS: Hot Rolled, Cold Drawn, Centerless Ground

FINISHES: #1, #2B, #2D, #3, #4

RYERSON STEEL

JOSEPH T. RYERSON & SON, INC. PLANTS AT: NEW YORK • BOSTON • PHILADELPHIA • CHARLOTTE, N. C. • CINCINNATI • CLEVELAND
DETROIT • PITTSBURGH • BUFFALO • CHICAGO • LWAUKEE • ST. LOUIS • LOS ANGELES • SAN FRANCISCO • SPOKANE • SEATTLE

How We Licked Our BOILER-WATER PROBLEMS

► **Boiler troubles at this mill were solved by monthly and daily tests on the water**

► **Four chemicals got rid of general corrosion and pitting**

By SAM BOYER, Wisteria Hosiery Mills, Inc., Gastonia, N. C.

SCALE, GENERAL CORROSION, pitting, carry-over, and embrittlement were some of the boiler-water problems that bothered us at Wisteria Hosiery Mills, Inc., Gastonia, N. C. We've solved them all now, and carry-over was the only problem that chemical treatment didn't solve. Carry-over was eliminated by lowering the high water level in our two-pass 125-hp. boilers. [See TW, Jan., '54, p. 96.]

An internal inspection had been made by a boiler inspector and the maintenance supervisor at our plant. They found about ⅛ in. of scale in spots on the shells and tubes. They also found evidence of corrosion and pitting.

Survey Diagnosed Trouble

The job was too big for us to tackle; so we called in a chemical-engineering company to make a survey of our boiler operation. The company analyzed the raw-water and boiler-water, evaluated the condition of the boiler equipment, and investigated our operating practices.

A field engineer then instructed our people on how to use four chemicals to treat the water. This instruction included simple tests to determine when adjustments should be made in the daily water treatment to obtain maximum efficiency and economy. The tests are made daily by our plant personnel with a simple field kit.

If the tests are within tolerance, we use a specified amount of the four chemicals for our daily water evaporation of 6,000 gals. More or less chemicals are used if the tolerance is greater or smaller. The tolerances shown on the daily water analysis are:

Excess sulfite, 30 to 50 parts per million

Hydrates, 200 to 400 parts per million

Excess phosphates, 20 to 40 parts per million

Chlorides, 77 parts per million and below

Boiler scale has been prevented with ¾ lb. of Drew Adjunct B, which is an anhydrous phosphate that removes calcium hardness as a sludge. Some tests showed as much hardness as 36 parts per million. Such water deposited more than 0.3 lb. of hardness salts per 1,000 gals. of raw water.

• Some waters change in composition with the seasons. Some plants have a supplementary water supply that is used in emergency. These conditions make regular water testing and treating a must.

pH Is Kept at About 11

Corrosion is prevented by adjusting alkalinity with anhydrous alkali to correct low pH. If the daily tests are within tolerance, we treat the water with ½ lb. of Drew Adjunct H.

The hydrate alkalinity determines the Adjunct H dosage. We determine the pH with a pHydron kit of litmus papers with a graduated scale of direct-reading values. We maintain the pH at about 11.

Organic AC is a sludge-conditioning organic that forms a floc, with high absorptive properties, in the boiler. The floc absorbs precipitated sludge formed by the internal-hardness removal to make the sludge fluid. In this condition, the fluid doesn't stick to the metal boiler surfaces. About 2 lbs. of organic AC is used in each treatment.

Pitting is prevented with 2 lbs. of Drew OCS if the excess sulfite is within tolerance. Drew OCS is an anhydrous sulfite material that removes free oxygen.

When the chlorides show an excessive build-up, we increase the blowdown for the boiler. We now use six 20-sec. blowdowns daily to control the dissolved solids in the water.

Monthly Tests Are Important

The service engineer visits the plant about every month. He makes an analysis of the raw make-up water to note any significant changes that might affect the control limits for the boiler water.

The analysis includes tests for hardness, alkalinity, chlorides, and silica. The boiler water is tested for hydrate alkalinity, chlorides, phosphates, and sulfites. These tests are done in the plant with a portable laboratory the service engineer carries.

If the engineer notes any significant changes in our water, he sends samples of the water to the main laboratory for further analysis and study. The engineer also makes an internal inspection to check the progress of the treatment. Mechanical problems such as too-high water levels, flame impingement, and signs of oils are also checked.

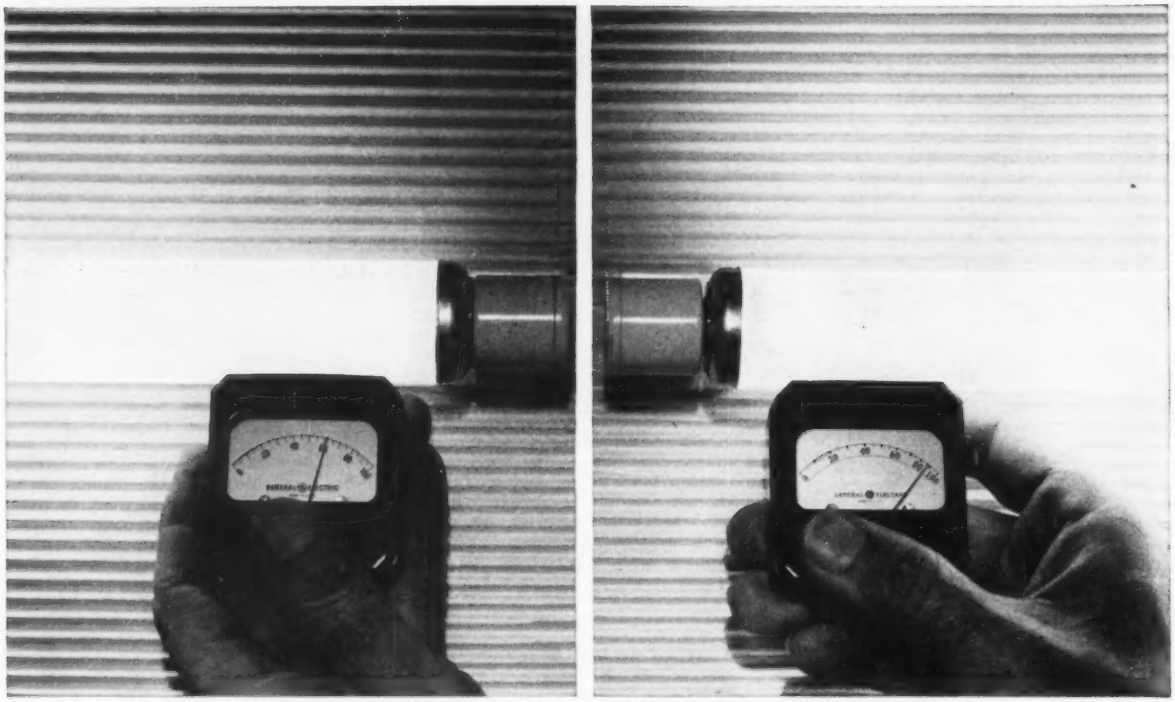
Humanics — A TW Brief

What Makes a Good Executive

A good executive, according to Albert Pleydell Associates, Inc., management consultants, has these ten qualities:

1. **He can be trusted completely.**
2. **He knows his job.**
3. **He gets things done.**
4. **He delegates responsibility and authority.**
5. **He gives credit to others.**
6. **He is fair and impartial.**
7. **He stays ahead of his job.**
8. **He has imagination and a sense of humor.**
9. **He can inspire others to want to work.**
10. **He has sympathetic understanding for others.**

New G-E lamp gives 1/3 more light than any other fluorescent lamp



Regular slimline, left, gives 62 units of light. New High Output Rapid Start lamp, right, gives 84 units.

Gives extra light without extra fixtures or maintenance

GENERAL Electric announces another in their long line of lighting "firsts", the new General Electric High Output Rapid Start fluorescent lamp. It gives 36% more light than the most powerful G-E fluorescent lamps previously available. And it gives this increase in light with the same number of fixtures and with no increase in maintenance costs.

Especially suited for the textile industry, this new General Electric lamp can reduce the cost of installing and maintaing your new lighting system by one-third. Since fewer lamps are needed, it is particularly effective in areas where high ceilings make maintenance difficult.

Despite the increase in light, the G-E High Output fluorescent lamp has the same long life as other General Electric fluorescent lamps. This new Rapid Start lamp lights up almost instantly and without starters.

It's easy to install, too. The High Output lamp has the same simplified push-pull feature that has helped make General Electric slimline lamps so popular. There are no exposed contacts in the base. A new General Electric design protects the contacts by recessing them.

These lamps are now available in 96-inch lengths. 72-inch lengths are planned for production very soon.

TAKE ADVANTAGE OF G-E'S ENGINEERING SERVICE

Your G-E lighting is a product of the finest engineering services in the field of illumination. Nothing can take the place of a quality lamp in the right application and that's why, in terms of performance, General Electric fluorescent lamps give you the most value for your lighting dollar. For instance, in factory areas where it's necessary to determine the exact shade and hue of material, the G-E De Luxe fluorescent lamp with its special phosphors gives the accurate color rendition you need. For more information on your lighting problems, contact your G-E lamp supplier or write Lamp Division, General Electric, Dpt.166-TW-8, Nela Park, Cleveland 12, Ohio.

Progress Is Our Most Important Product

GENERAL ELECTRIC

For more information, write direct or use Reader Service post card.

How the Management Team Can Build Better Human Relations

Pointers FOR SUPERVISORS

Are Disciplinary Rules Necessary?

▶ Many a supervisor finds that his own experience disagrees with the expert advice he gets on how to discipline workers. Here's some advice for supervisors who have had trouble applying general principles to on-the-job practice.

By **JAMES E. GARDNER,** Assistant Director of Personnel Research, Fieldcrest Mills

FOREMEN WHO HAVE BEEN DOING any recent reading on the subject of discipline are probably very much confused. If so, the source of the confusion must be this: The experts, usually with backgrounds in sociology or psychology but none in foremanship, are dealing with principles or generalizations. The foreman is dealing with actual situations that defy easy application of principles. Moreover, the principles, when applied to industrial disciplinary cases, appear somewhat contradictory and, if carried to great length, could actually destroy the discipline they are intended to foster.

A few of these principles or pointers are these:

Have as few rules as possible.

Be sure to explain the rules to employees and tell them the reasons for the rules.

Self-discipline is the best discipline.

Be wary of automatic penalties.

Consider each case on its own merits.

Let's take a look first at this idea of keeping the rules to a minimum. We are told that some companies have only one rule: Conduct yourselves like ladies and gentlemen. This rule defies definition or explanation. "Gentlemen" is, in the sense used, one of those abstract terms that can mean almost anything. We have known some very gentlemanly gentlemen who were chronic absentees. Is a man any less a gentleman if he spends so much time smoking that his loom set gets in a hole?

Once the company defines the word —and it must or no one will know what it's talking about—then it is setting up specific and multiple rules. The simple fact of the matter is that you can't explain generalizations and abstractions. Consequently, if you reduce your rules to one or a few generalizations, you won't be able to explain them to your employees. And, in such an extreme situation, you won't have any discipline in your department.

Similarly, you can destroy discipline in your department if you take to extremes the advice to consider each case on its own merits. The people who give such advice are naively assuming that you can determine the merits of the case. This requires, first of all, that you get all the facts. Foremen who are experts in human relations recognize how difficult it can be to get just some of the real facts—not the whole truth by any means—in a discipline case.

Beyond this first difficulty, there is always the danger that a foreman will ultimately accept any extenuating circumstance as an acceptable excuse. The bleeding-heart school of sociologists, you remember, were reluctant to hold a man personally responsible for his own acts. They could always blame improper conduct on the slums, the depression, etc. etc. Similarly, if a foreman went too far in considering the merits of individual cases, he could always place the blame on someone or something else.

Where do you draw the line? If a man is found asleep on the job, do you excuse him simply because he was tired and decide what is a legitimate reason for his fatigue? Is it all right if he stayed up with a sick friend and not all right if he were in a late card game (assuming you can really find out where he was)?

If a man leaves the job to smoke too often, do you excuse it because smoking has become a habit with him? Do you argue, "Why punish him when he is merely the victim of some evil comrade who enticed him behind the barn with the lure of cornsilk when he was 12 years old?"

If a man comes to work drunk, do you blame some convenient emotional disturbance dating back to childhood?

These examples are overstated, of course. But they serve to make this point: When a foreman is asked to consider not whether an act itself is reprehensible but whether the reasons or motives or causes behind the act are reprehensible, he is being given a legal and psychological chore he is not prepared to handle. We've got to assume there is some degree of individual responsibility for the voluntary acts of employees.

There is a further consideration in this advice to treat individual cases on their own merits. We have been told time and time again that we must consider employees not only as individuals but as members of work groups. To some extent this group concept becomes lost in the advice to treat each case on its own merits. A foreman knows that when he disciplines an employee, the whole department is looking over his shoulder. If a foreman is inconsistent—from time to time or from individual to individual—in the handling of similar cases, he is inviting disciplinary trouble in his department. It is difficult to explain to employees the peculiar circumstances of a specific case. It is doubtful if such explanation would prevent the charge of preferential treatment.

Finally, the tendency to look with favor upon the self-discipline that develops in the work group, aside from formal rules, requires some re-examination in the light of what goes on in specific mills or plants. We may be assuming too much.

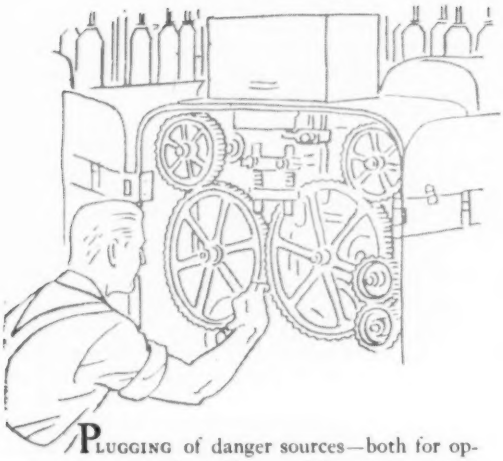
First, we assume that the group's informal rules of conduct on the types of actions approved by the group are consistent and stable. If we are asked to rely on self-discipline, we must assume it is reliable. Foremen know this is not always so. Leaders in the work group can influence the group's attitudes and beliefs. The foreman, himself, by failing to enforce certain rules, can foster in the work group the belief that certain conduct is acceptable no matter what the rule.

CONTINUED ON PAGE 180

MICRO SWITCH Precision Switches

A PRINCIPLE OF GOOD DESIGN

Mills find profits in MICRO SWITCH protection for men and machines



PLUGGING of danger sources—both for operators and machines—with MICRO SWITCH precision switches is common practice of progressive textile mill owners.

This employee of the Borden Mills, Kingsport, Tenn., can't get his fingers caught in the gears. The MICRO SWITCH precision switch turns off the power when he opens the door. Borden equips all their spinning frames in this way.

But safety is only one way MICRO SWITCH products contribute to more production from present textile machine. Used as limits and interlocks, they make all kinds of machines more automatic and efficient.

For special advice and consultation there is a MICRO SWITCH field engineer at the nearest branch office. Stocks of switches are available at the MICRO SWITCH distributor near you.

THREAD BREAKAGE on a knitting machine can be expensive. Unless the machine is stopped at once it can mean breakage of costly needle beds.

R. E. Miller, plant superintendent of the E-Z Mills at Carterville, Ga., figures two of these MICRO SWITCH precision switches are saving him $50 a year per knitting machine. He installs them to replace stop motions and mechanical stops that often failed when thread breakage occurred.

Like Mr. Miller, hundreds of mill operators are saving important money by the use of these MICRO SWITCH products to make equipment more automatic, safer and more productive:

Purchase these switches from the MICRO SWITCH distributor in your town. For technical information contact the field engineer at your nearest MICRO SWITCH branch office.

MICRO SWITCH provides a complete line of extremely reliable, small-size, high-capacity, snap-action precision switches and mercury switches. Available in a wide variety of sizes, shapes, weights, actuators and electrical characteristics. For all types of electrical controls.

MICRO SWITCH

A DIVISION OF MINNEAPOLIS-HONEYWELL REGULATOR COMPANY

FREEPORT, ILLINOIS

HONEYWELL

Exploring

The Textile Community

"Opportunity America" Is Graphic Community Relations

▶ Here's what one textile mill is doing to promote the advantages to be found at its own front door. In a Georgia-made movie designed to show young people that the greenest pastures are those at home, the whole community has found a new appreciation of its way of life and work.

By MILDRED BARNWELL ANDREWS

LIKE MANY OTHER INDUSTRIES, Jefferson Mills of Jefferson, Ga., hated to see its brightest young people leave home for what they thought were greener pastures. Every community knows about this problem, and the smaller ones feel it most acutely.

Jefferson Mills proudly presented the premier of a motion picture in its home town recently to show that pastures are green right at home. The film, entitled "Opportunity America," was produced over a period of two and a half years by the Beeland-King Film Company of Atlanta.

Best of all, it is truly a homemade motion picture, for it portrays highlights in the life of a young Jackson County lad who found that opportunity was greatest in his home community and that happiness, as the old popular song goes, is "right under your eyes."

Since about one-third of Jefferson's population works in the textile plant and the entire movie cast were home folks, everyone in the movie audience absorbed the story of their own neighbor boy who found so much to appreciate in his home community. The mill concern is justifiably proud of the film, for it shows, through one boy's experience, the opportunities open to thousands of other young people whose roots are deep in the South's great textile industry.

Film Is Distributed Widely

Jefferson Mills is making the educational and entertaining film available to schools, civic clubs, training groups, and similar audiences. There are six copies of the film available, and they are kept busy on their road travels. Applications for the film may be sent to Jefferson Mills.

Jefferson is a small town in Northeast Georgia, not far from Gainesville. The entire section has swung away from the one-crop economy of cotton; and the traveler today sees modern plants housing textile machinery, mills where garments and all sorts of appliances are made, and industry of many diversified facets. It is a good part of the world to live in. And Jefferson Mills has made the most of that fact in the new film.

President Morris Bryan of Jefferson Mills, his two brothers, and all others who direct policies of the big textile plant are proud of the fine relationship between management and workers and of the material advantages provided for the employees' health, safety, and welfare.

Employee Programs Stressed

The mill has its own training program for workers. There is a safety program that benefits all employees. That it has proved successful is shown by the excellent safety record that mill management and employees alike are proud of.

The employees have a weekly newspaper that gives them intimate and personal accounts of their friends and neighbors that no big city dailies, TV, or radio can do.

Jefferson Mills, like all progressive concerns, knows that its biggest asset is not its material equipment, its spindles and looms, its buildings. It realizes that its first and most valuable asset is its loyal body of workers. For these men and women and their families, Jefferson Mills provides a year-round program of recreation and health building.

There is a full-time recreation director for the rounded schedule of softball and other organized games throughout the year. He also supervises the annual fishing contest that is open to all employees. Since Jefferson is within easy driving distance of North Georgia's famous bass and trout streams and the TVA lakes that lie along the state's northern borders in Tennessee, the competition to see who can catch the biggest fish may well become as exciting as a Presidential election.

Recreation for All Ages

There are open-air vacations for children of mill employees in the eight-week day camp operated each summer by the mill concern. Here, children from five to high-school age have the time of their lives in attractive surroundings that rival the finest national parks. Under the direction of trained instructors, they swim, play all kinds of games, practice handicrafts, sing, and eat heartily. The camp is free for all children of Jefferson and community.

If you should see the film "Opportunity America," you may be interested to know that the young hero is now a guest of Uncle Sam in the Army but that he will one day be back home, where his old job will be waiting. And you'll be especially impressed with the true spirit of real community relations the film story unfolds.

ALEMITE OIL-MIST

saved $2400 first year

...extended bearing life from

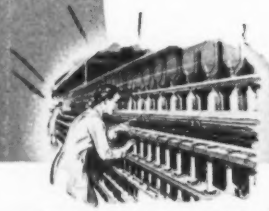
20 weeks to one year and four months

Textile mill breaks bottle-neck, cuts Down-Time, ups Production

Bearing temperatures on an important blower were running 200°. Bearings burned out frequently. Production losses totalled $1000 with each failure. Mill output lagged with down-time for repairs. Here was a bottle-neck that had to be broken! Management turned to Alemite lubrication. Installed an OIL-MIST unit costing little more than a hundred dollars. *Result*: Bearings are still operating with no failures to date—after one year and four months. $2400 has been saved, down-time has been eliminated and production increased!

Compare all these OIL-MIST advantages with ordinary methods!

- Reduces bearing temperatures as much as 20%
- Continuous, uniform lubrication of all types of bearings
- Air pressure seals bearings against dirt
- Reduces oil consumption—up to 90%
- Prevents product spoilage
- Eliminates guesswork—each bearing picks up as much OIL-MIST as it needs
- Reduces starting and running torque.



Facts prove this *"Friction Fighter"* most efficient, continuous, fully automatic lubrication system

All industry looks to Alemite for the latest, most advanced lubrication methods. OIL-MIST, Alemite's great lubrication development, is the famed system that *atomizes* oil into mist—distributes it through tubing to bearings—bathes all bearing surfaces with a cool film of clean, fresh oil. Here is the system that simplifies and materially cuts the cost of machinery lubrication. With no moving parts, the lubricator is the last word in efficiency.

Job Proved and thoroughly tested in hundreds of applications in every phase of industry, OIL-MIST uniformly maintains oil film on plain and anti-friction bearings, gears and chains, despite variations in load, temperature or speed. Don't you owe it to *your* business to learn all about Alemite OIL-MIST—*today?*

ALEMITE OIL-MIST Lubricates All Types of Mechanisms

Alemite OIL-MIST Lubrication

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☐ Please send me a FREE copy of your new and complete OIL-MIST catalog.

☐ Please have your Alemite Lubrication Representative arrange a desk-top demonstration of OIL-MIST. This entails no cost or obligation on my part.

My name.....

Title.....

Company.....

Street.....

City.....State.....

TEXTILE Equipment NEWS

Pneumatic Mangle Gives Even Pressure Across the Nip

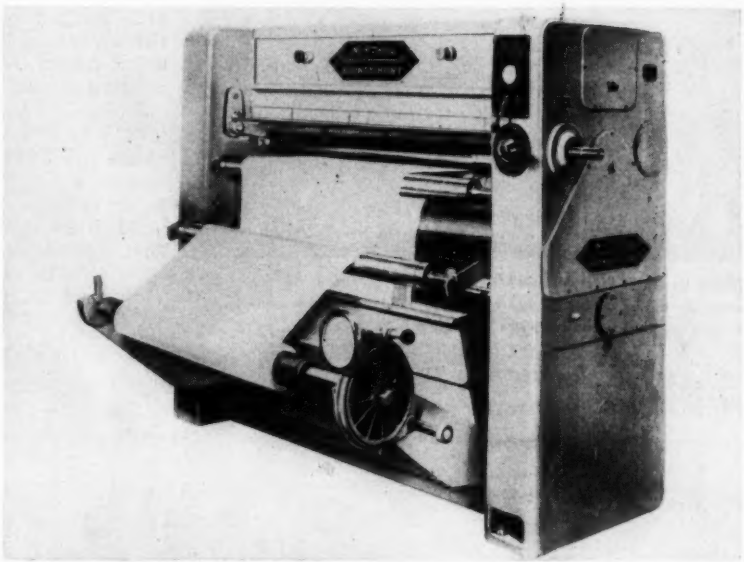
The Niptrol pneumatic mangle, introduced by Rodney Hunt Machine Co., 68 Mill St., Orange, Mass., at the Atlantic City show, is designed for use with all types of fabrics. It can be built with various combinations of tubs, immersion rolls, batchers, let-offs, compensators, folders, and drives to meet mill specifications. The machine can be equipped with a drive for extraction alone, for extraction and starching, for resin application and dyeing, or for any combination of these functions. With a multiple drive, an outside gear shift controls the selection of drive.

The pneumatic load system consists of an inflatable air tube, confined in a channel and pressing against a steel plate that bears against the brackets on the pressure rolls.

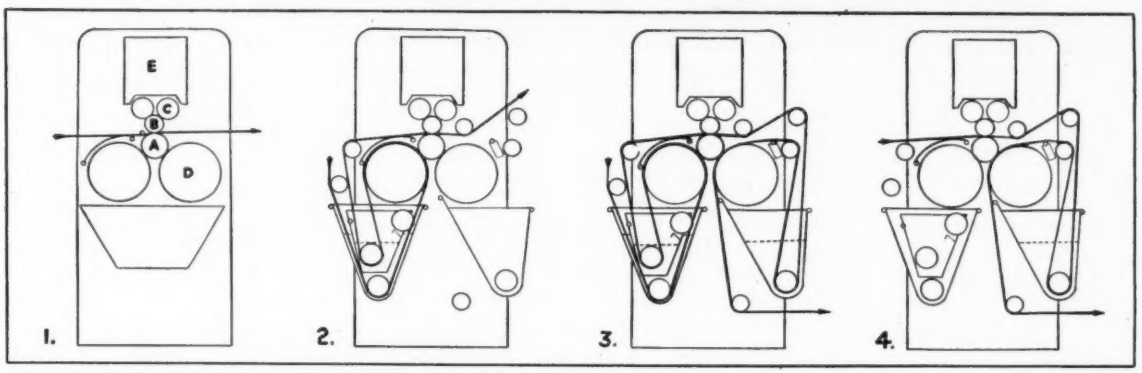
On extraction, it is possible to get the same degree of extraction running 3-oz. and 10-oz. fabrics side by side through the Niptrol. Extraction figures run to 46% for cotton muslin, 57% for drapery fabrics or spun rayon, and 63% for wool plush.

On resin application and dyeing, resins are penetrated into the fibers, and dyestuffs are uniformly distributed. Excess liquid is removed at the final nip and returned to the chemical bath.

Mercerizing can be done on wet goods with even saturation. After mercerizing, additional extraction on the Niptrol expedites drying.



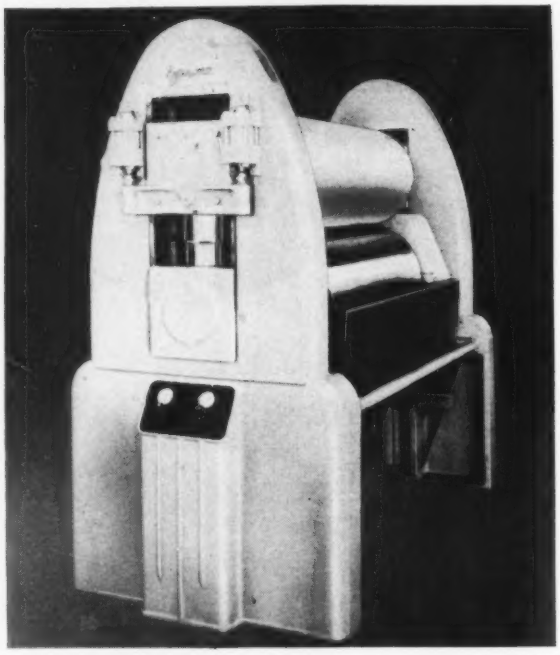
THE NIPTROL PNEUMATIC MANGLE maintains a constant nip of about 3/16 in. across the width of the roll at maximum working pressure of 250 lbs. per linear inch. Pneumatic pressure is applied on staggered brackets attached to two segmented pressure rolls, and total pressure is distributed through the length of the upper squeeze roll to compensate for the deflection of the roll. A feature is the soft pressure roll, which is said to be constructed of a "new revolutionary roll-covering material." Cloth speed is up to 160 yds. per min.



CLOTH-THREADING VARIATIONS permit the machine to be adapted to a wide range of wet-finishing processes. *A* indicates soft open-surface pressure roll; *B* is a steel roll; *C* refers to two sets of segmented pressure rolls; *D* is a pair of hard rubber-covered support rolls; *E* is the loading system. Fig. 1 shows the machine threaded for simple extraction; Fig. 2 shows threading for resin application and dyeing; Fig. 3 shows how to use all three nips for special processes; Fig. 4 shows the threading for continuous extracting and starching.

Circle T-1 on Reader Service Card

Finishing Machine Has Four Applications



FOUR-IN-ONE FINISHING MACHINE can be used as a padder, mangle, rolling calender, and embossing calender. Two models, one with a pressure equalizer, are available.

Two models of a machine for textile finishing have been announced by H. W. Butterworth & Sons Co., Bethayres, Pa. Both models, the Rocket and the Auto-Rocket, can be used as a two- or three-roll padder, two- or three-roll mangle, two-roll embossing calender, or a two- or three-roll rolling calender.

1. The standard Rocket, which is built to provide independent pressure control for each side of the machine, is used where there are frequent applications for different pressures per side.

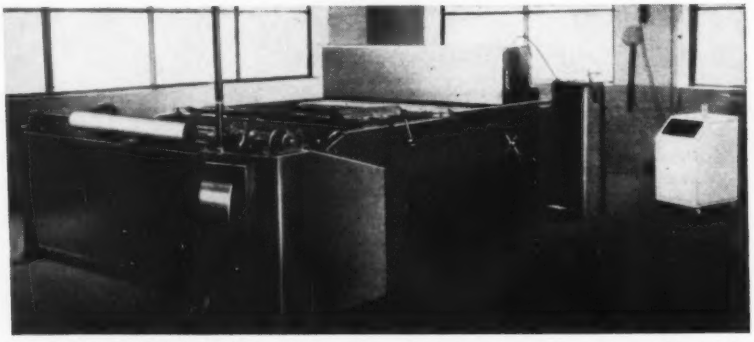
2. The Auto-Rocket can do everything the standard Rocket can do; but in addition, it is equipped with a pressure equalizer that automatically maintains absolute uniformity of pressure across the face of the rolls. Should the operator adjust the pressure settings incorrectly (with different pressure settings per side) the Auto-Rocket will automatically take the average of the two settings and maintain that pressure evenly from side to side. It is virtually impossible to obtain uneven pressure per side unless desired. If a separate pressure control is required, a valve closes off the automatic pressure equalizer.

Hydraulic-pneumatic control of the roll pressure ranges from 0 to 30 tons. Controls are built into the unit. The driven roll at the bottom is stainless steel; top roll is rubber. To convert the machine into any of its four applications, remove the top cap of the machine frame and lift the rolls out of the machined guides. The machine is piped for pneumatic and hydraulic control circuits; so in changing rolls, no lines need to be disturbed.

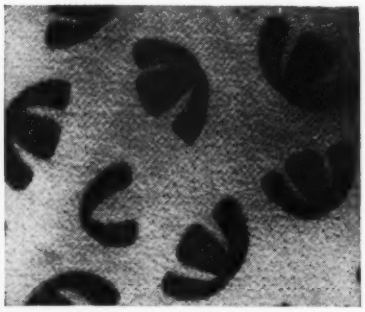
Standard roll widths are 50, 60, 66 and 72 ins. Other widths are furnished as required.

Circle T-2 on Reader-Service Card

New Flock-Printing Machine Is Compact



FLOCK-PRINTING MACHINE has cloth rolls at the left end, screen printing table in the center, and the electrostatic flocking device at the right end. The control panel is at the far right.



FLOCK PRINT is automatically printed except for application of the adhesive. This sample is a woolen-serge dress material printed with a rayon flock.

A new machine for flock printing is being marketed by Fritz Hofer, Amtgausquai 23, Olten, Switzerland. The features are the small size of the machine and its simple method of operation.

The cloth is unwound from a cloth roll and placed underneath a single screen, where the adhesive is applied according to the screen pattern (up to 24 ins.). While the adhesive is being applied to the next strip, the first pattern strip passes under the Rotoflock electrostatic flocking device, and the prepared flock sticks to the printed portions of the fabric.

After leaving the flocking unit, the flocked material is dried and beaten to remove superfluous flock. Superfluous flock is taken away by a vacuum cleaning system and reused. Then the finished cloth is wound onto the batching roll.

Drying time for the adhesive and polymerization (which gives the permanent bond) is between 10 and 20 secs. The elements, which may be controlled in stages, have a maximum output of 18 kwh. for heavy fabrics and are automatically covered to prevent burning if the fabric is hindered in any way.

The standard machine is designed to take material up to 53 ins. wide; the floor area required is 8 ft. 3 ins. by 18 ft. 1 in. Larger machines can be supplied.

Except for the printing of the adhesive, the operation of the Melostat is automatic. Two unskilled operators are required. Production is 1,000 to 1,500 yds. daily.

Circle T-3 on Reader-Service Card

smart printers say **DISCOLITE...**

DISCOLITE®...

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...when they want the best high temperature reducing agent for vat colors and discharge pastes.

HIGH TEMPERATURE EFFICIENCY ... practically *no loss* of strength at high temperatures.

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VERSATILE ... equally fine performance in white or colored discharge printing — or indigo printing.

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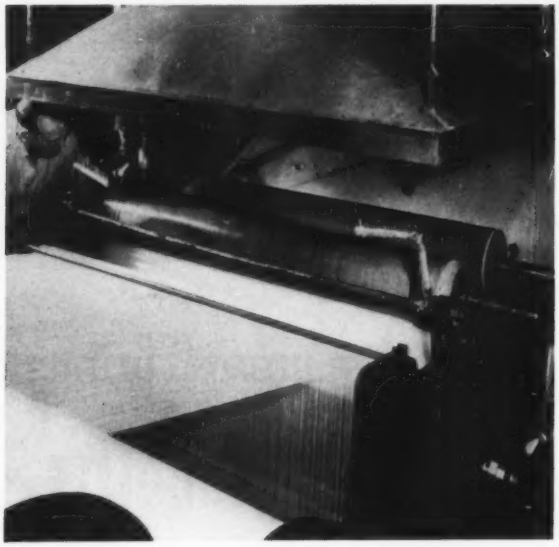
Dayco Slasher Roll Requires No Covering



A new slasher roll for faster and more-uniform sizing of warp yarn has been announced by The Dayton Rubber Co., Dayton 1, Ohio. The Dayco Thoro-Size slasher roll was developed in Dayton Rubber's Textile Research Laboratories from new materials, compounds, and processing methods.

Warp yarn is effectively impregated with the starch sizing solution without damaging or marking the fibers because of the long-lasting resiliency of the roll surface. Excess size solution is squeegeed back into the solution tank.

The rolls require no covering; they do not have to be removed in changing sets; and they are not affected by the sizing solution, oils, or chemicals. The elasticity of the surface cushions the yarn and permits sizing operations to get under way as soon as the mill is started.

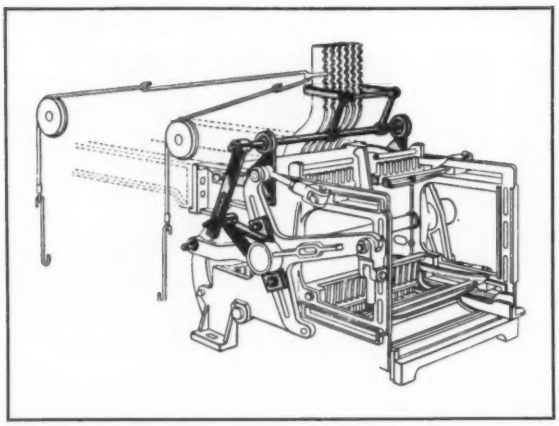
The rolls can be resurfaced to last for two or three times the normal period. They are said to pay for themselves within a year.

←

NEW SLASHER ROLL developed by The Dayton Rubber Co. requires no covering and is not affected by size, oil, or chemicals.

Circle T-4 on Reader-Service Card

Dobby Attachment Reduces Set Marks and Broken Warp Ends



SET-MARK PREVENTER bolts onto the two sides of a dobby; and in 20 to 30 mins. the loom is ready to run again. Lower harnesses are lifted when the loom stops.

A set-mark preventer, said to reduce or completely eliminate set marks in twills, sateens, Bedford cords, and other weaves, is being manufactured by Dill Loom Adapters, Inc., P. O. Box 1475, Greenville, S. C., at $45 per loom.

The device is applied to loom dobbies by bolting it onto the two dobby sides. No holes have to be bored in the loom or dobby, and no loom parts have to be removed.

The adapter is said to be fully automatic in that no resetting or manual attention has to be given to it after it's placed on the loom. Only one setting, a timing, has to be made after the device is applied. Installation time is said to require 20 to 30 mins. per loom.

The set-mark preventer lifts the lower harnesses of the warp shed when the loom stops. The warp ends in the lower harnesses are then almost parallel with the ends in the raised harnesses of the shed. (There is just enough distance between the ends to avoid sticking together.)

In addition to preventing set marks, the manufacturer states that closely checked tests on several hundred of the devices in production on various fabrics show a large reduction in broken warp ends.

Circle T-5 on Reader-Service Card

Special Cone Winder Takes Ban-Lon Crimping Device

A special-model 102T cone winder has been developed by Foster Machine Co., Westfield, Mass., for use in the Ban-Lon process for making crimped nylon-filament yarn. The crimping device, which is attached to the winders, is furnished to Ban-Lon licensees by Joseph Bancroft & Sons Co., Wilmington, Delaware, which controls the process. The crimping device is easily attached to the machine by two screws and plugged into the electrical circuits already on the machine.

The process is simple. A thermoplastic filament yarn, such as nylon, is drawn from the pirn or bobbin, around a tension device, and through feed rolls on the crimping attachment. The feed rolls force the yarn into a stuffing tube, where the crimp is formed. While in the stuffing tube, the yarn is subjected to thermostatically controlled electric heat, which makes the crimp permanent. Then the yarn is drawn out of the top of the stuffing tube over a stop-motion drop wire. After passing the drop wire, the yarn goes through the traverse guide and is wound onto an increased-taper, 3° 30′, knitting or warping cone.

Production speeds are much higher. For example, 70-den. yarn can be processed at 250 yds. per min., giving a production of almost 2 lbs. of crimped yarn per spindle per 8-hr. shift in one continuous process.

Circle T-6 on Reader-Service Card

new DRAPER LOW COST SPINDLE-

Anti-Friction

for

- STIMPSON or THOMPSON CLUTCH
- SOLID ACORN
- BAND DRIVE
- TOP DRIVE
- TAPE DRIVE

Outstanding in World Spindle manufacture . . . inexpensive and completely reliable. Note these mill proven features:

- LOW COST
- REDUCED OILING CYCLE
- DECREASED VIBRATION
- INCREASED SPEED WITHOUT INCREASED END BREAKAGE
- ALL STEEL BASE CONSTRUCTION
- RUST-RESISTANT FINISH

Cost savers like these belong in your mill operation. Draper offers you a complete line of filling and warp Anti-Friction spindles for use with wood bobbins.

NEW TOP DRIVE SPINDLE
Large Anti-Friction and Medium Anti-Friction constructions.

LARGE ANTI-FRICTION SPINDLE
With Stimpson Clutch — Can also be furnished with Thompson Clutch and Cap.

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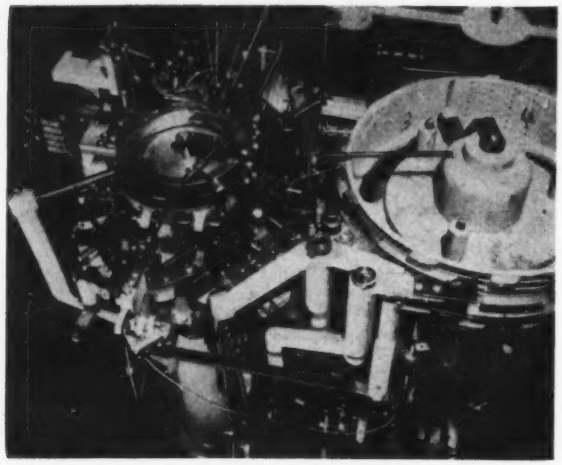
For more information, write direct or use Reader Service post card.

New Argyle Knitter Has Four-Position Clutch



NUMBERS on the horizontal pattern drum indicate the yarn-finger and clutch positions. The plate over the cylinder supplies tension to the fabric, and each sock drops off the machine when knitted.

A machine for knitting argyle socks has been developed by H. E. Crawford Mill Supply Co., 824 S. Main St., Kernersville, N. C. The Crawford machine produces a solid-color argyle sock with a clear-cut suture between the colors.

A 1- to 1½-in. length of yarn is left in the needles at each yarn change. This yarn is knitted into the suture with the aid of a revolving brush that sweeps the loose end into the needles during the knitting of the new diamond. This feature makes a secure joining at each diamond and eliminates trimming of the ends by the operator.

Yarn changes are done by six yarn fingers arranged one above the other. Each finger has a separate yarn trapper, and the assembly moves up and down as the yarn changes. This movement of the yarn-finger attachment allows all yarn fingers to move to an identical position opposite the needles.

A large pattern drum over the main-shaft controls the yarn fingers. Numbers painted on the inside of the drum correspond to the yarn finger in action for easy timing.

The four-position clutch is a new feature on the machine to allow the cylinder to stop oscillating while the machine is still running. The clutch on the end of the main shaft has four notches cut in it. A cam on the horizontal pattern drum selects a clutch position for the start of a new diamond.

All the needles are in the high, or heel and toe position, at the start of a pattern. A new diamond is started by pulling two needles down to knit. These two needles have high butts, and a special dividing cam selects these needles. Groups of high-butt needles are arranged at 90° around the cylinder. The clutch position determines the group to be selected.

When a break occurs in the needle track, the picks operate to complete the diamond. There are no design drums to control the needles. All needle selections are done by the two up picks at the back of the cylinder and the four down picks at the front of the cylinder. A new mechanism in the up-pick attachment allows the pick to select one or two needles according to the design to be made.

The picks are controlled by selector levers. The levers drop the picks into action as required by the control drum, and many designs other than argyles can be made by changing the pick-operating cams. These designs include panel diamonds, diamonds in diamonds, and block patterns. [For one mill's experience with this machine, see page 82.]

Circle T-7 on Reader-Service Card

Saco-Lowell Develops New 14x36-In. Coiler

A new 14x36-in. coiler for cotton cards has been developed by Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass. Features are:

REDUCING MOTION has been built in at the foot of the coiler trunk. Since the turntable is driven by a chain from a sprocket on the upright shaft, the lay can be changed by simply replacing the sprocket on the upright shaft.

TUBE GEAR has been improved on the Saco-Lowell coiler, which is completely new in design and construction. The coiler is in production for new cards as well as for replacements.

Circle T-8 on Reader-Service Card

Spindle Brake Is Attached With No Changes to Spindle

ECCENTRIC CAM BRAKE for spindles, developed by Hartford Machine Screw Co., Hartford, Conn., fits any Hartford spindle. The spindle need not be dismantled to attach the brake; so brakes can be purchased as needed. Because of its cam action, the hand-operated brake stays set. Replacement can be made without disturbing the spindle itself.

Circle T-9 on Reader-Service Card

NOW FROM ROHM & HAAS

TRITON AS-35

A stable, high-foaming detergent, wetting agent, and level dyeing assistant

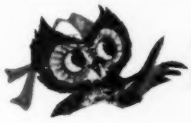
TRITON AS-35 is characterized by high foam, excellent detergency, and good wetting and level dyeing properties. TRITON AS-35 possesses excellent softening and lubricating properties for protecting fiber, yarn, or fabric during severe processing.

For kier boiling of cotton goods, TRITON AS-35 is mutually soluble and beneficial with pine oil, and gives fabrics improved absorbency and greater uniformity. Yet it shows no defects attributable to channelling or scum caused by hard-water soaps.

Its excellent detergency and high foaming properties make TRITON AS-35 extremely effective for soaping off prints.

For scouring piece goods, the cushioning effect of TRITON AS-35 suds minimizes wrinkling and creases.

Consider TRITON AS-35 as a level dyeing assistant for fast wetting in acid dyeing, uniform shades of good clarity with direct dyes, and increased dispersion and color value of acetate dyes.



Write today for complete information on TRITON AS-35

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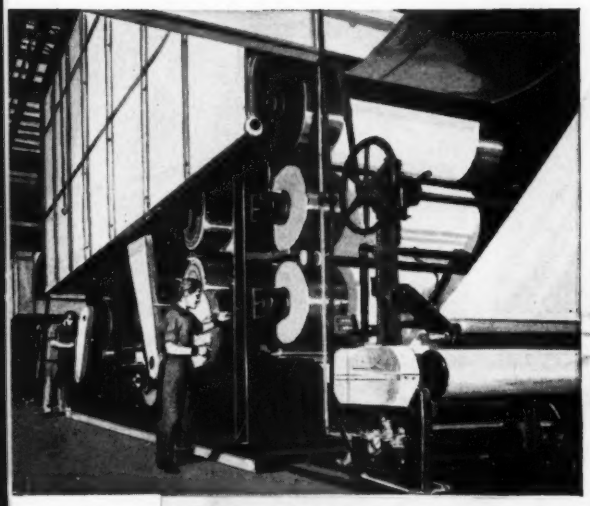
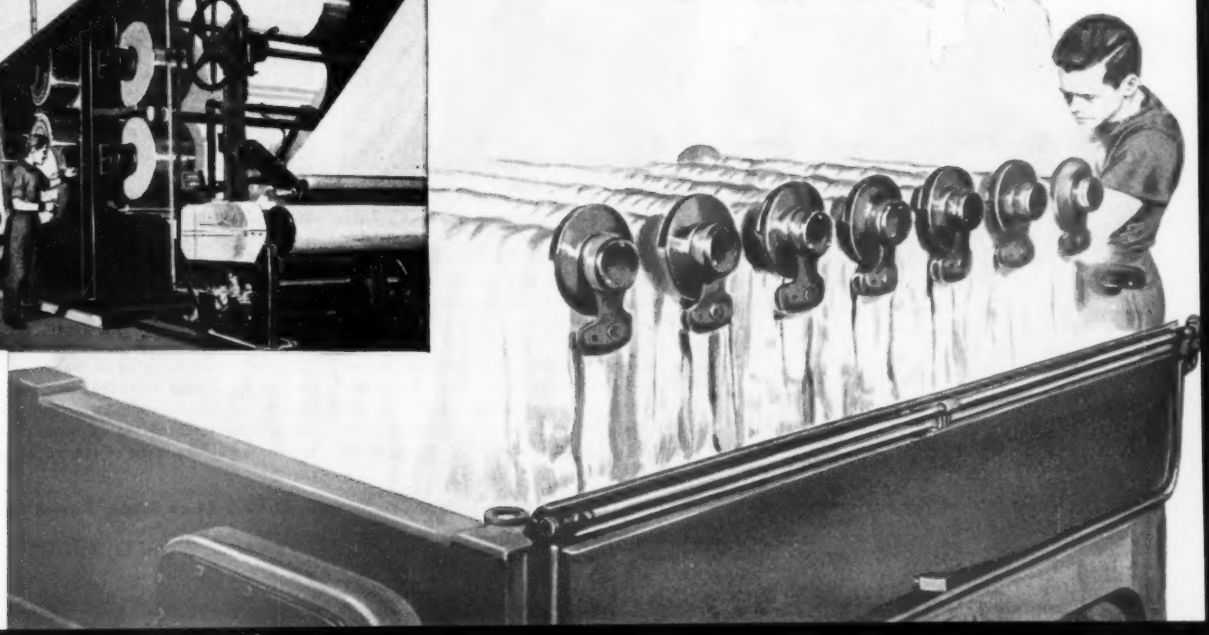
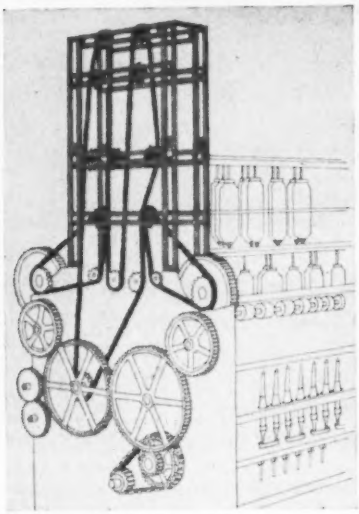




Slub-Yarn Attachment Works Through Back Roll



SLUB ATTACHMENT can be mounted on any make of spinning frame. A pattern chain controls the slip pattern.

The slub-yarn attachment made by Ferguson Gear Co., Gastonia, N. C., can be mounted on any make of spinning frame to produce slubs in cotton, spun synthetics, wool, or any combination of those fibers.

The heart of the attachment is an overrunning clutch built into the crown gear. This overrunning clutch permits the speed-up of the back roll, which produces a slub at the moment of speed-up. By speeding up the back roll rather than slowing down the front roll, the advantage of increased production is gained.

A pattern chain is used with pins to control the position of the slub. Thus, by inserting pins in various places in the chain, any regular or irregular pattern of slubs can be put into the yarn. The attachment is flexible in that the length and diameter of the slub, within limitations, can be regulated.

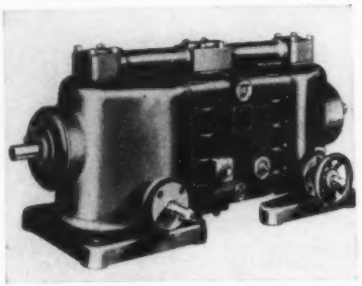
Circle T-10 on Reader-Service Card

Hydraulic Guider

A new hydraulic guider has been announced by Blake Electric Mfg. Co., 43 Commercial Wharf, Boston, Mass. The guider operates at a pressure of 125 lbs., and it comes complete with feelers, hydraulic cylinders, and pumping unit. It is said to be extremely accurate, with split-second action and no overrun. Installation is simple, and maintenance has been reduced to a minimum.

Circle T-11 on Reader-Service Card

Variable-Speed Hydraulic Transmissions for Textile Drives



HYDRAULIC TRANSMISSION is a variable-speed packaged unit for textile-machinery-drive applications. This unit has a stem control (left) for regulating pump delivery and a handwheel control (right) for regulating motor delivery.

Variable-speed hydraulic transmission units particularly adapted to textile-machinery drives are available from Vickers, Inc., 1400 Oakman Blvd., Detroit 32, Mich. Applicable to machine drives on pads, tentering frames, dyebecks, and other equipment requiring accurately controlled variable speeds, they can be run constantly at any selected speed from zero to 1,000 rpm. Creep speeds are not limited by speed selection or length of operation.

Acceleration and deceleration rates are constant and stepless throughout the speed range of each transmission. Speed control is positive without lag or override conditions; so fine adjustments are provided.

Completely sealed and self-lubricated, the package units have variable-displacement, axial-type piston pumps. They are adaptable to synchronization and can be used where a succession of in-line machines is required.

The transmissions are usually driven by conventional squirrel-cage a.c. motors with no special starting characteristics and a nominal input speed of 1,140 rpm. They are available in 5-, 7½-, 10-, 15- and 25-hp. standard models.

Assemblies include stem, handwheel, cylinder, pressure compensator, servo, and electric control. When the individual control is on the pump end of the transmission, it regulates output speed and horsepower. When it is on the motor end, it also regulates output shaft speed and torque.

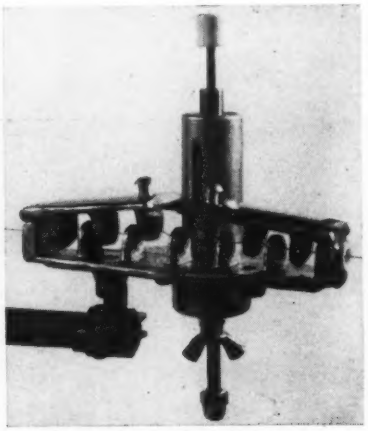
Circle T-12 on Reader-Service Card

Clearer-Roll Cleaner Attaches to Vacuum Line

CLEARER-ROLL CLEANING MACHINE, made by Acme Machine & Tool Co., 2601 Wilkinson Blvd., Charlotte, N. C., and distributed by Yeomans Textile Machine Co., Spartanburg, S. C., can be connected to a vacuum-stripping waste-removal line. The machine automatically cleans clearer rolls dropped into a two-tier scray an armful at a time. When the clearer rolls reach a pair of knurled rolls, the waste is removed by vacuum action. Since the waste-removal system is directly connected, the waste goes into its proper bin. This machine is in operation at Calhoun Mills.

Circle T-13 on Reader-Service Card

Spring Tension Device Compensates for Variations

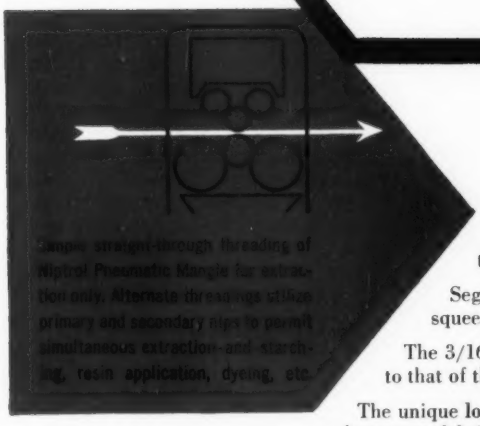


COMPENSATING TENSION DEVICE is applicable to bobbin and cone winders, warpers, and circular knitting machines. It can be mounted in any position. Made by H. Boehme Ltd., 174 Oxford Rd., Manchester 13, England, the tensioner provides exact adjustment of thread tension from 0.5 grams up. There are no tension weights. The movable eyes (top), which are mounted on hinged brackets, tend to move away from the fixed eyes (bottom) by action of a compression spring in the casing. The force of the compression spring is adjusted by the screw at the bottom of the casing.

Circle T-14 on Reader-Service Card

Use the NIPTROL* Pneumatic Mangle

for New Highs in Extraction Rates



Simple straight-through threading of Niptrol Pneumatic Mangle for extraction only. Alternate threadings utilize primary and secondary nips to permit simultaneous extraction-and-starching, resin application, dyeing, etc.

New principles . . . new design . . . new degrees of extraction efficiency . . . have made the Niptrol Pneumatic Mangle the outstanding current textile machine development.

Segmented pressure rolls, pneumatically controlled, assure uniform squeeze-roll pressure for the full width of the roll.

The 3/16-inch primary nip assures extraction efficiencies equal to that of the centrifuge . . . but processing is continuous.

The unique lower squeeze roll assures complete freedom from mechanical damage to fabrics, even those of heavy pile or delicate texture.

Varied threadings and combinations of tubs, immersion rolls, drives and auxiliaries permit simultaneous and continuous extraction-and-starching, resin application, dyeing, mercerizing, etc., on a wide variety of fabrics.

We are scheduling appointments at our laboratory for demonstrations of the Niptrol Mangle and its application to your needs. Write for new 4-color bulletin.

*NIPTROL is a trademark of the Rodney Hunt Machine Co. Patents Pending.

RODNEY HUNT MACHINE CO.
66 MILL STREET, ORANGE, MASSACHUSETTS, U. S. A.

Manufacturing Engineers Since 1840

RODNEY HUNT®

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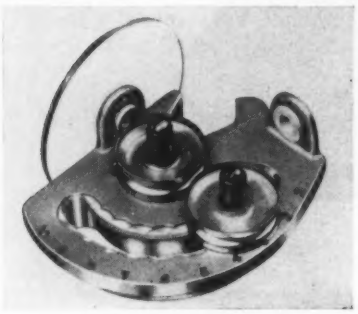
McBride Announces Tension-Control Unit



TENSION-MASTER provides a wide range of settings for tension control. Adjustment of tension is instantaneous; no tools are required. Each setting is numbered to permit absolute visual control, and a glance checks the alignment of all settings in each vertical row of units. The new unit, made by Edward J. McBride Co., Coltman Ave., Philadelphia 35, Pa., can be attached to almost any post and is readily adaptable to existing warper creels. A Plexiglass shield fixed to the side of the unit prevents the snarling of ballooning yarn even at the highest warping speeds in use.

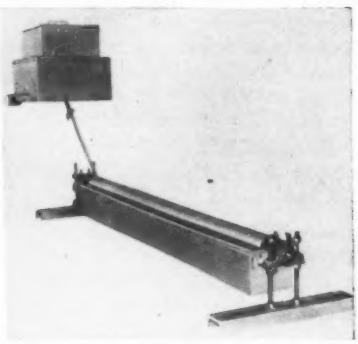
Circle T-15 on Reader-Service Card

D-B Colorimeter Provides Permanent Color Standards

DAVIS-BRUNING COLORIMETER, manufactured by Fisher Scientific Co., 717 Forbes St., Pittsburgh 19, Pa., reduces what the eye sees to a simple numerical formula that provides a permanent "color memory" for matching, mixing, shading, and specifying colors. Because it is a reproducible standard from operator to operator, from year to year, it eliminates the expensive problem of production lots ruined by color drift. Eight reference colors, selected for their brilliance, stability, and blending power, are furnished. The operator sees the colors blend as he would in mixing pigments. Price: about $1,100.

Circle T-16 on Reader-Service Card

Yarn Lubrication For Weaving



OVERWAXING ROLL, made by Seydel-Woolley & Co., 748 Rice St., N. W., Atlanta, Ga., is a device for applying melted wax to the yarn in a dry state. It has been found useful for Dacron and nylon weaving. It also has been tried by cotton mills with success. The added lubrication increases weaving efficency and, in some cases, has continued good weaving with less humidity. The equipment consists of a stainless-steel trough, which holds the melted wax, and a stainless-steel roll over which the yarn passes. The roll picks up a film of wax and transfers it to the yarn. By adjusting the relative speeds of the roll and the yarn, the right amount of wax can be applied. A melting pot acts as a reservoir for the melted wax, which is fed to the trough through a tube.

Circle T-17 on Reader-Service Card

▶ Compressive-shrinkage blankets manufactured by F. C. Huyck & Sons, Rensselaer, N. Y., for use in Sanforizing, are now being shipped in fibreboard containers. The fibre drums provide maximum strength with minimum weight. They have a smooth inner surface, which insures protection against snagging and abrasion. The main advantages are ease of handling, storing, and unpacking. Blankets not exceeding 400 lbs. in weight and 75 ins. in width or 21½ ins. in dia. will be shipped in the new containers.

Circle T-18 on Reader-Service Card

Bobbin Holder Has Rulon Bearing

BOBBIN HOLDER automatically adjusts torque to the package size. No brakes or ball bearings are used.

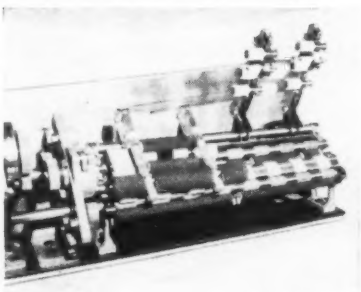
A bobbin holder whose turning torque varies in proportion to the size of the package is being produced by Dixon Corp., Bristol, R. I. Turning friction increases automatically, without the use of a brake, as yarn is stripped from the package. This change of turning friction eliminates overrun and drag.

Instead of ball bearings, this design uses Rulon, an oil-free bearing material developed by Dixon. The bobbin holder does not leak oil and grease and cannot damage the yarn with spots. It has an adjustable feature that will accept all commonly used bobbins without extra parts for various bobbin sizes. The holder is completely self-contained and can be adjusted by hand without tools of any kind.

Low cost is said to be a feature. A free sample is available on request.

Circle T-19 on Reader-Service Card

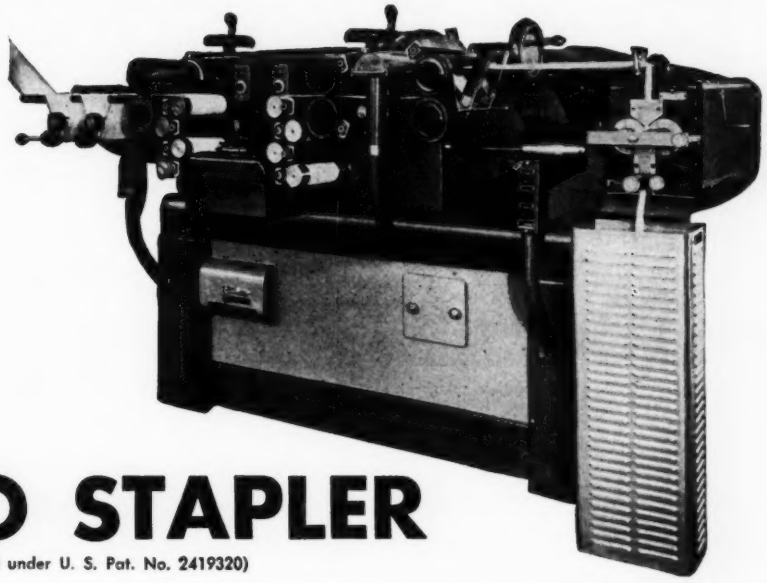
Double-Apron Drafting



DRAFTING MECHANISM, made by Spintex GmbH., Munhardt, Wurttburg, Germany, and distributed in the U. S. by Lenkotex Co., Inc., 136 Liberty St., New York 6, N. Y., has an SKF pendulum weighting arm and upper-apron cradle. Normal draft is 16 to 25 with cotton fibers to 1½ ins.; but with a special cradle, fibers up to 2⅜ ins. can be spun. With a special arm, drafts of 28 to 40 are possible on cotton and rayon. Features: (1) easy accessibility, (2) accurate control of material by adjusting distance between aprons, (3) proper support of lower apron, and (4) simple conversion to single-apron system.

Circle T-20 on Reader-Service Card

60•40 BULK ORLON FOR EXTRA PROFIT



via the TURBO STAPLER

(Licensed under U. S. Pat. No. 2419320)

Facts about TURBO Tow Processing..

LOWER COST
Less capital expense for machinery, less space, less skilled labor.
Pre-roving operations reduced to a new minimum — drawing can be simplified because sliver is amazingly even and parallel.

VERSATILITY
Handles all synthetic tow.
Minimum down-time for change-over to different fibers, deniers, staple lengths or crimp.
Additional end uses for your present inventory through alteration of staple length, filament denier, crimp and tenacity.

EVEN YARNS
Sliver is more even — it's made from uniform tow.
No co-terminal fibers — natural staple length variation.
Staple length can be controlled to match natural fibers — better blends.

There's many a road to profit, but if you're working with synthetic yarns, the smartest way is via the Turbo Stapler. Take Orlon* for instance, process it on the Stapler and you end up with more yarn than you started with — at least it seems that way for you'll get more merchandise from the same amount of yarn.

Through the heat-stretch method originated with the Turbo Stapler, the loft of Orlon can be greatly increased. The tow is heat-stretched, converted to staple and then crimped. 60% of this production can be steam relaxed, in the Turbo Crimp Setter, and then blended with 40% non-relaxed fibers. When this blend is carried through to yarn in the conventional manner and dyed, the non-relaxed fibers contract, forcing the already relaxed fibers to arc-up. Result — increased loft. This new yarn will give better coverage, has more life, more bulk . . . and less yarn is needed per garment.

That's just one feature of the Turbo Stapler. If you're profit minded it will pay to get the whole story . . . write for full information today.

*duPont trademark for acrylic fiber

TURBO SINCE 1929

TURBO MACHINE COMPANY, LANSDALE, PA., U. S. A.
Southern Representative: F. W. Warrington Co., Charlotte, N. C.

For Quick Color Analysis

SPECTRONIC 20, a combination colorimeter and spectrophotometer, uses a diffraction grating to produce a high wave-length accuracy and spectral purity. Manufactured by Bausch & Lomb Optical Co., 635 Paul St., Rochester 2, N. Y., the instrument has an effective range of from near ultraviolet to near infrared. Readings from routine colorimeter tests can be interpreted as concentrated values from predetermined calibrations supplied with the instrument.

Circle T-21 on Reader-Service Card

Crane Truck Handles Bales

TRUCK CRANE with 6,000-lb. capacity, equipped with a 30-ft. telescoping boom, makes short work of picking a large bale out of storage. Because of the swinging action of the crane, it is able to reach over to get or deposit its load. The vehicle, manufactured by The Elwell-Parker Electric Co., Cleveland 3, Ohio, is shown with the boom in its shortest position. The crane can be used for unloading gondola cars, where its long boom easily reaches over the sides of the carriers. Other attachments can be used.

Circle T-22 on Reader-Service Card

Reed Refinishing Machine Works From ¼-Hp. Motor

REED GRINDING AND BRUSHING MACHINE has a ¼-hp. motor and no vacuum exhaust system. Manufactured by Affutex Mfg. Co. of Sweden and available in the U. S. from Edda International Corp., 470 Fourth Ave., New York 16, N. Y., the Excelsior machine has brushes that reciprocate in conjunction with a grinding stone. The stone and brushes can also be used separately. Reeds up to 8 ft. long can be handled on the standard model; special models, handling reeds to 10 ft., can also be supplied.

Circle T-23 on Reader-Service Card

Counter Determines Speed Necessary To Nap a Fabric

NAPPING-SPEED COUNTER attaches to any napping machine to determine the roll speed necessary for various materials. Made by Kettling & Braun and available from Stellite American Corp., 60 E. 42nd St., New York 17, N. Y., the counting and control device prevents damage to fabrics caused by a wrong setting of the napper. Price is approximately $100.

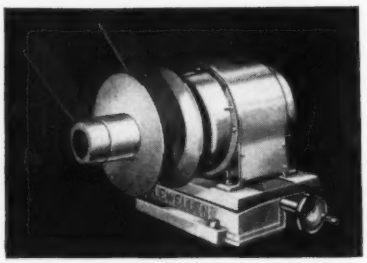
Circle T-24 on Reader-Service Card

Push-Button Looper Makes 200 Loops Per Minute

PUSHBUTTON WEAVER operates at 200 strokes per minute and an operator can make a 27x54-in. pile or loop rug in about 2¾ hrs. Made by Klug Engineering Co., 216 S. Mansfield Ave., Los Angeles 36, Calif., the device will put in about 3,456 loops per square foot. The device is recommended for the small mill that wants to produce limited quantities of throw rugs out of nylon rovings or rayon yarn. The looper can be adjusted to make loops from 3/16 to 2 ins. in length.

Circle T-26 on Reader-Service Card

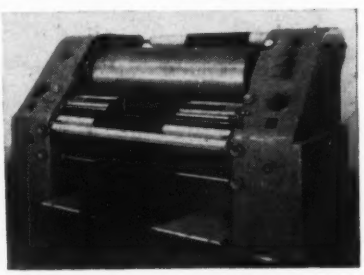
Variable Pulleys Lower In Overhung Load and Cost



RERATED VARIABLE PULLEY, made by Lewellen Mfg. Co., Columbus, Ind., offers a 50% reduction of overhung load and a 40% saving in space. Cost per horsepower has also been reduced. Ratings are fractional to 15 hp., scaled to all present and new NEMA motor frames. Speed ranges: 2¼ to 1, 3 to 1, and 4 to 1. Companion bases and countershafts are also offered. Mounting arrangements are flexible.

Circle T-25 on Reader-Service Card

Automatic Rotary Press



ROTARY PRESS, made by Kettling & Braun in Germany and available in the U. S. from American Stellite Co., 60 E. 42nd St., New York 17, N. Y., features a limited lift and descent of the press bed, controlled by adjustable safety switches; an elastic pressure distributed uniformly over the full width of the fabric; automatic sinking of the press bed when a seam is passing; an electric brake to eliminate damages; and a new device that indicates the presence of foreign substances in the fabric.

Circle T-27 on Reader-Service Card

CONTINUED ON PAGE 142

Differences in water conditions, equipment characteristics, materials processed — all of these factors, and many more, must figure in your soap specifications.

Swift's years of constant attention to the varied needs of our many customers, backed by continuous research and development, have resulted in experience, know-how and a diversity of products that is your best assurance of finding the best soap or detergent for your job.

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NEW Dyes AND Chemicals

Wrinkle-Resistant Finish

A new wrinkle-resistant finish for cottons has been developed by Textile Resin Dept., American Cyanamid Co., New York, N. Y. The finish, known as Cyana Superset, is said to increase wrinkle recovery as much as 18% before washing and 31% after washing over the regular Superset finish.

Treated fabrics reportedly have shown little or no loss in strength and little or no yellowing in the AATCC accelerated chlorine test.

The new finish is said to reduce bleeding of direct dyes and improve washfastness of many types of dyes.

Circle D-1 on Reader-Service Card

Nonionic Resin for Sizing and Finishing

A nonionic resin, Chem Resin G, has been announced by Chemical Products Corp., West Paterson, N. J. It is described as dilutable and soluble in water and in most organic solvents containing oxygen. The dried film is said to be clear, firm, flexible, colorless, odorless, lustrous, nontacky, and resistant to nearly all hydrocarbon solvents, greases, and oils.

Circle D-2 on Reader-Service Card

Two Products for Whitening Fabrics

Hilton-Davis Chemical Co. Div., Sterling Drug, Inc., Cincinnati, Ohio, recently announced two new whitening agents called Safaritone White WNOA and Safaritone White C. Described as economical and easy to apply, WNOA is said to have level-dyeing characteristics on wool, nylon, Orlon, and acetate.

Safaritone White WNOA is said to be soluble in warm water and applicable at low temperature to fine fabrics from the soaping or rinsing operation without disturbing pH adjustments. Safaritone White C is designed for whitening bleached cotton goods or viscose-rayon fabrics.

Circle D-3 on Reader-Service Card

Surface-Active Agent

Nonic 300, a polyethylene glycol alkylphenyl ether nonionic surface-active agent, has been announced by Sharples Chemicals Inc., Philadelphia, Pa. Reportedly characterized by excellent stability to acids, alkalis, and oxidizing agents, Nonic 300 functions as a wetting agent, a detergent, and an emulsifying agent.

The product is said to be effective over a wide range of water hardness, pH, and temperature and is soluble in a variety of compounds.

Circle D-4 on Reader-Service Card

Water Repellent

Silicone Products Dept., General Electric Co., Pittsfield, Mass., has announced Dri-Film, a new silicone water repellent. The finish is said to cause the fabric to shed beverages and many foodstuffs without being stained.

Circle D-5 on Reader-Service Card

Blue Dye for Cotton and Rayon

National Solantine Blue GLFV, recently announced by National Aniline Div., Allied Chemical & Dye Corp., New York, N. Y., is the latest addition to National's line of fast-to-light, nondusting direct dyes.

On cotton or rayon, the dye produces moderately bright shades of blue. Medium-depth dyeings on rayon are said to rate 8 for lightfastness. Resin finishing makes the shade slightly greener and brighter, but lightfastness is said to suffer little impairment. The product is recommended for women's dress goods and suitings and for sports and play clothes.

Circle D-6 on Reader-Service Card

Dyeing Assistant and Scour For Burlington Machine

A dyeing assistant and scour, developed specifically for use in the Burlington nylon-tricot dyeing machine, has been announced by Dexter Chemical Corp., New York, N. Y. The necessity of adding solvents to the liquor for scouring and dyeing synthetic fibers in the Burlington machine is eliminated when Dexopal 99 is employed, the producer states. The agent is said to promote levelness and penetration and to keep dirt and grease emulsified. Found effective in the reduction of air pockets that lead to uneven dyeing, the product is also reported by Dexter to minimize foaming.

Circle D-7 on Reader-Service Card

Red-Brown Vat Dye

Ahcovat Brown 4-R Double Paste, a homogeneous anthraquinone dyestuff, was recently added to the vat-dye line of Arnold, Hoffman & Co., Inc., Providence, R. I. The color produces red-brown shades and is said

CONTINUED ON PAGE 158

New Process for Pad Dyeing Synthetics With Acetate Dyes

A new process for pad dyeing synthetics with acetate dyes was announced recently by Textile Colors Div., Interchemical Corp., Hawthorne, N. J. Acetate, nylon, and Dynel have been successfully dyed by this method, it is reported.

In the new method, material is passed through an aqueous pad liquor containing a highly dispersed acetate dye, a penetrant, a swelling agent, and a gum. The color is then developed with hot water under controlled conditions of time and temperature. The basic procedure can be modified by adding wetting agents or carriers to the pad liquor or by incorporating fast-to-light direct dyes for cross-dyed effects on mixture or blends of acetate or nylon with cellulosic fibers.

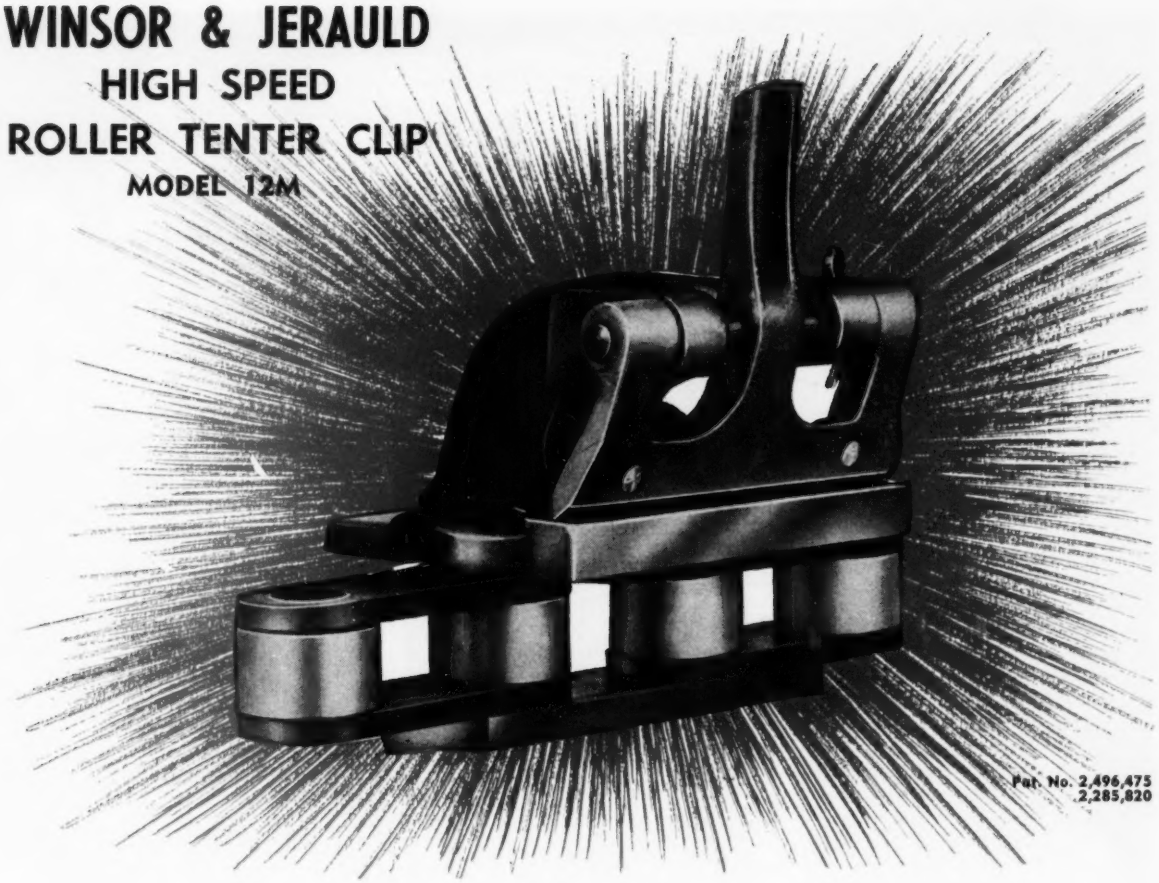
The padder can be set up in a range to permit dyeing, developing, and drying in one continuous operation; or the fabric can be pad dyed, plaited into boxes, and then developed later.

Out of the line of Interchem Acetate Dyes, approximately 20 highly dispersed direct-dyeing colors have been selected that are particularly suitable for application by the new pad-dyeing process. With these 20 dyes, it is said, a complete range of shades from pastels to blacks, including navies and dark browns, can be obtained.

WINSOR & JERAULD

HIGH SPEED ROLLER TENTER CLIP

MODEL 12M



The model #12M Roller Type Automatic Tenter Clip has been designed and developed to lift the speed limitation and increase the cloth control in the operations of high speed tenter chains.

Essentially, the clip consists of a malleable iron main body, bronze jaw, and a full 2" pitch roller chain.

Particular attention is called to the fact that the bottom is a true roller chain with all parts made of oil-hardened alloy steel providing low friction operation and smooth operation at the sprockets. A patented interlocking feature on the bottom plate prevents the weaving action found in conventional roller chain.

The top is a duplicate of the famous Winsor and Jerauld #7 tenter clip, which has proven its superiority over the years. As with the Winsor and Jerauld #7 tenter clip, any type of controller can be furnished in addition to our new high speed "slow drop" controller. The entire top can quickly be removed by means of two screws and another substituted, or a pin plate be used.

Our staff is at your service without obligation and in addition, our Southern Division is fully equipped to check and repair tenter chains of all types. We look forward to serving you from our main plant in Providence, or from Charlotte.

Experts in Cloth Finishing Machinery

Winsor & Jerauld

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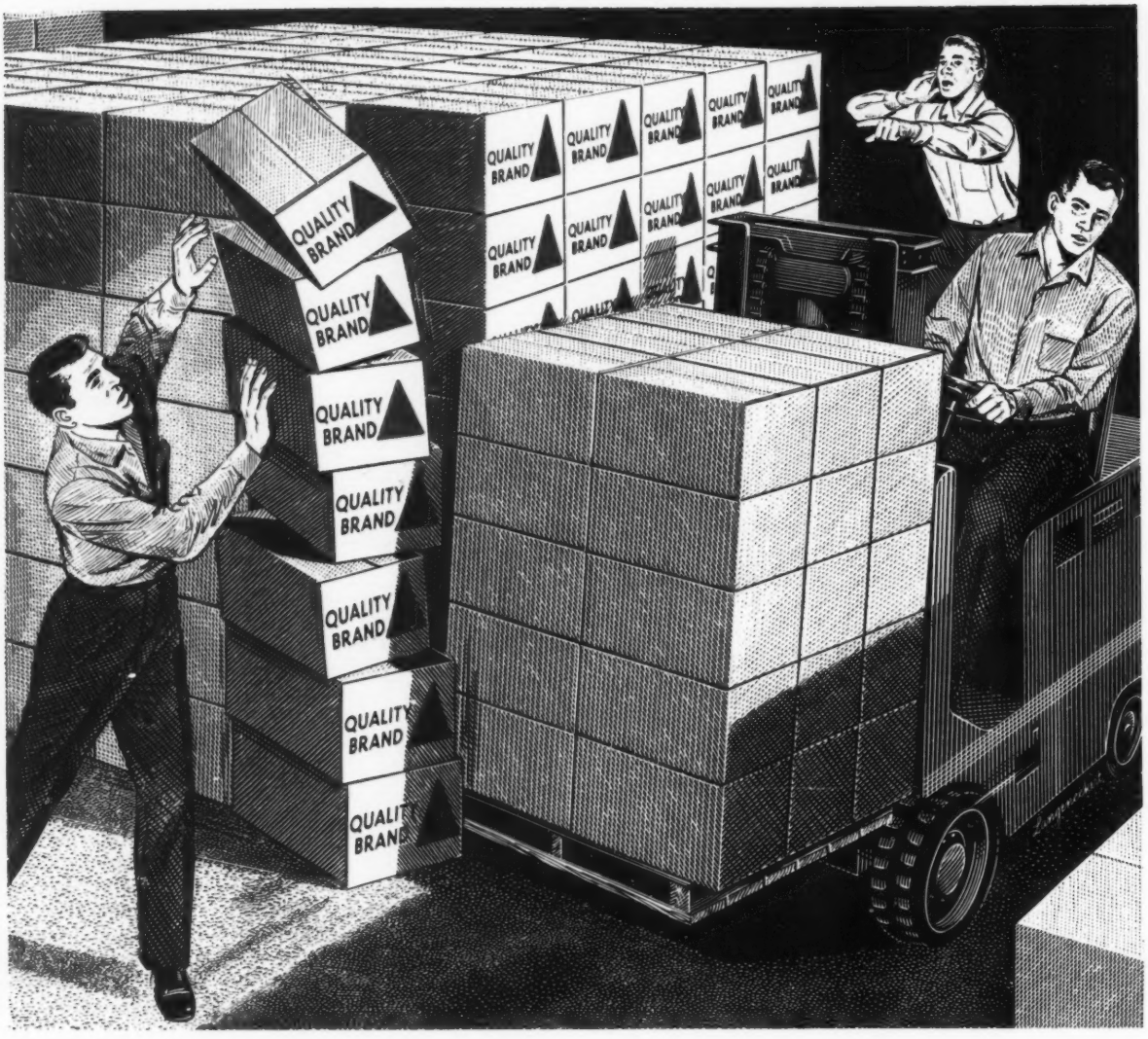
Providence 5, R. I.

Southern Division
815 Alameda Avenue
Charlotte, N. C.

For more information, write direct or use Reader Service post card.



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LETTERS FROM READERS

Round Table

What's on your mind?

We welcome your comments. Whether you agree or disagree, with us or anybody else, we will be glad to have you air your views.

Unless you ask us not to, we will use your name and company connection when your letter is printed. If you prefer to have your opinions appear unsigned, we will respect your confidence by using only a set of initials.

Write to Editor, Round Table, TEXTILE WORLD
330 W. 42nd St., New York 36, N. Y.

ATLANTIC CITY SHOW

Dear Editor:

Let me congratulate you on the article "What Was New at the Atlantic City Show." This complete coverage of each phase of the industry shows a thoroughness that is a compliment to your editorial staff, and I am sure the various members of the industry fully appreciated having it presented to them in this way.

I have already learned more from this article than I did from the show itself. . . . You have done the textile industry a great service.

W. C. CHISHOLM
President and Treasurer
Foster Machine Co.
Westfield, Mass.

INCENTIVES FOR DOFFING

Dear Editor:

For many years the industry has accepted, with little variation, a standard spindle-doffing load of between 35,000 and 40,000 spindles.

Maximum efficiency has been maintained by those mills that have shifted from hourly wage rates to piece-work and incentive pay. Since doffing is a laborious hand task that involves physical effort related to lifting and piling boxes of bobbins and yarn, maximum efficiency is more difficult to maintain on hourly wage rates. I have worked with both and can attest to the fact that many of the headaches connected with the doffing task can be eliminated by the piece-work and incentive methods of payment.

MARCUS C. GROSS
Dracut Center, Mass.

THE SOUTH AS A PRODUCTION AREA

Dear Editor:

Concerning your editorial "Where Do We Want Our Mills?" [June, '54, p. 4]:

I agree that "labor-cost content" of unit price is important. But it is placing the cart before the horse to say that labor-cost content has accounted for the growth of the textile industry in the South.

There are other factors that must be considered in comparing the North and South as production areas. For instance:

Weather—What is the absentee rate of Northern mills compared to Southern mills? A great snowfall will stall Northern operations—slow down train and truck supplies of raw materials coming in and finished products going out.

Worker Transportation—Southern workers depend upon private means of getting to the job with car pools. A rail strike or public bus strike does not concern them.

Balanced Distribution—New England mills quote prices as "5% higher west of the Rockies." A mill situated in the Middle South can ship economically along the lines of the spokes of a wheel. If the Northeast is covered by a snow, the Southwest can get the goods. Prompt delivery means prompt sales. More-effective coverage by salesmen will be realized if the weather prevents a Northeast trip. They can swing down through the South with a minimum of delay.

Growth of the U. S.—In the early years of our development, the Northeast had the qualifications because of hydro power, ethnic background of textile immigrants, and their background of textile-machine crafts. Today, the population shift has crossed the Mississippi River and is heading southwest. Therefore, the means of production must follow. . .

I am writing this merely as a point of information to a publication that we depend upon to advise the latest and best in production principles. Progress does not take time to apologize.

TOM CUTHILL

Sales Planning Dept.
Appalachian Mills Co.
Knoxville, Tenn.

TEXTILE TICKLES . . . . . *By Edgar Allen, Jr.*

"I'll be a little late, dear. I'm doing a little testing!"

Round Table (Continued)

STUBBORN—OR SPORTING?

Dear Editor:

Would you be good enough to print this reply to Squire Blackshaw's "Who's Stubborn?" letter in your June issue.

. . . Mr. Blackshaw, France has not so many things to be proud about that she can let her metric system be looked down upon.

You say Mr. Monsech adds nothing to your knowledge of the metric system. I dare say he did not even try. He probably thinks, as I do, that there is no problem involved in a universal system for numbering textile products: just adopt the metric.

Have you any idea as to the thousands of hours lost daily by translators over the world who have to convert ounces to grams and vice versa?

The only ones who profit by your stubborness are the sportsmen. There are the champions of the mile and the kilometer, the 100 yards and the 100 meters, etc. The adoption of the metric system the world over would reduce their chances of being champions of the world.

A. Y. Fletcher

Paris, France

CORRECTION

Dear Editor:

We regret to inform you that there is a misunderstanding of one of the features of our closed-system dryer in your description headed "Heat Exchanger Increases Efficiency of Dryer" [TW, Jan., '54, p. 144].

The consumption of steam per pound of evaporated water is in fact 0.6 to 0.8 lbs., irrespective of the drying time, which mainly is dependent upon the material to be dried.

The steam consumption with the old-type dryers is 2.2 lbs. per pound of evaporated water, while the new-type dryer consumes only 0.6 to 0.8 lbs., regardless of the drying time.

B. Thies

Spezialmaschinen-Fabrik
Coesfeld, Westphalia, Germany

Carpet Mill Leaves N. Y.

After making carpets in Yonkers, N. Y., for over a century, Alexander Smith, Inc., has announced its intention to liquidate its Yonkers plant and concentrate manufacturing operations in its new Mississippi plant. A special 90-day contract has been signed with the Textile Workers Union of America (CIO) to work out existing orders, with a provision for three additional 30-day extensions if necessary.

Petitions have been circulated in Yonkers to urge the company to stay in Yonkers.

Questions AND Answers

▶ **TEXTILE WORLD's editors are at your service to help solve your problems in yarn manufacture, weaving, knitting, dyeing, finishing, or other textile operations. If you have a technical problem bothering you, send it along to the Editor, Questions and Answers, TEXTILE WORLD, 201 E. Coffee St., Greenville, S. C.**

Nylon Can Be Flameproofed

Technical Editor:

Why is it that some nylon fabrics are more resistant to burning than others? Can nylon be successfully flameproofed? (9799)

Undyed, finish-free nylon is more resistant to burning than cotton, rayon, silk, or wool; but pigments, dyes, oils, finishes, and salts that are present on the yarn may cause combustion. Flame retardants for certain textile materials may increase the flammability of nylon. These retardants are not flammable, but they cause the molten drops of nylon to thicken; and instead of dropping off the material, the drops cling to the fabric and become ignited.

Chrome and other metallized dyestuffs tend to increase flammability; but acetate, acid, and direct dyestuffs have little effect.

Nylon can be flameproofed with thioureaformaldehyde resin. Satisfactory results can be obtained with as little as 2% resin.

A method of flameproofing nylon fabrics with this treatment has been explained in a feature article [TW, Mar., '51, p. 130].

Yarn-Speed Meter Controls Stitch Length

Technical Editor:

I noticed a Kink on leveling stitches on circular knitting machines by the trial-and-error method [TW, April, '54, p. 133]. Are there instruments to do this work? (9800)

Yes. Two instruments have been invented during the last few years. One device consists of an indicator that has an eyed needle connected to a dial. The eye of the needle is slipped over the hook of a latch needle, and the device is rested on the sinkers or the dial needles at the stitch point while the machine is slowly turned. The lowest reading on the dial is recorded, and the stitch cams are adjusted while the device is hooked to the needle.

The second instrument was developed by the Hosiery and Allied Trades Research Association, Nottingham, England. This device also has a dial, but the dial reading shows the amount of yarn fed to the needles per minute. At present, the device is usable only on revolving-cylinder machines. The device is held in the yarn path while the machine is running. The yarn from the cone is wrapped around a wheel that operates an indicator finger on the dial. The instrument is covered by world patents and is available only to members of the association.

Use Glauber's Salt To Eliminate Harsh Feel

Technical Editor:

What can we do about a harsh feel that we are getting on fabrics of a cotton-wool blend? (9802)

Try using a cationic softener. If you're using common salt, switch to Glauber's salt and try a longer dyeing cycle.

An acid dye has a tendency to give a softer handle than an alkaline dye. Keep pH down to 8; a pH of 9 is too high.

Don't boil. Keep the temperature at 190 to 200° F., and cool 20 mins. to sample.

Put 0.1 to 0.2% anionic in rinse water before the dyeing process; it will act as a wetting agent. Although you may get suds, you will get no precipitation.

Spooling Speed Affects Snick-Plate Efficiency

Technical Editor:

What should spooler snick-plate settings be in relation to the yarn diameter, and what effect do increased spooling speeds have on snick-plate efficiency? (9807)

No fixed rule can be applied to determine the relation between the diameter of any given yarn and the snick-plate setting. The diameter of

a yarn is determined by (1) the amount of twist in the yarn, (2) whether the yarn is combed or carded, and (3) what percentage of fibers is in the yarn if it is a blend. The blade opening should be about three times the yarn diameter if the yarn is carded. The blade opening should be slightly closer if combed yarns are run.

Spooling speed will affect snick-plate efficiency. One mill spooled 40s combed yarn at 1,200 yds. per min. with a snick-plate setting of 0.014 in. and the tailings averaged 40%. The spooling speed was cut to 1,000 yds. per min. The tailings increased to 52% with the same snick-plate settings.

Another mill spooled 31s carded yarn with a snick-plate setting of 0.22 in. The actual gouts removed at 1,275 yds. per min. averaged 10.52%. When the spooling speed was reduced to 1,100 yds. per min., the gouts increased to about 15%.

Boil Streaky Rabbit-Hair Fabric With Detergent

Technical Editor:

How can we eliminate streaks in lightweight suit fabric made from a blend of rabbit hair? (9803)

These streaks usually start in the blending room; then the poor condition shows up in the dyehouse. Remember that there are different grades of rabbit hair—some slippery, some dry, some short staple. Like casein fiber and the newer synthetics, rabbit hair will ride to the surface of a blend with wool. Probably the best way to correct your trouble is to blend and card more carefully.

You might try boiling off with a detergent. You have to neutralize the fabric back to a pH of 7. Try a little acetic acid or ammonium sulfate.

Time the Head Motion To Stop Harness Skips

Technical Editor:

How can I prevent harness skips in wool-synthetics blends? (9801)

Ideal conditions under which to weave this fabric are with a Knowles head on either a W-3 or a C-4 loom. This head and the throw of the crank arms on these looms give a clean shed. The Knowles-head timing should be made by setting the box motion to medium, slow, medium. This setting will give a harness setting of fast, medium, slow that will separate the warp ends.

If you're weaving the fabric on any other loom than W-2, W-3, or C-4, your shed opening may be too small because your crank-arm throw is not great enough to clear your shuttle sufficiently. If this is true, your only alternative is to use a smaller shuttle and reduce the size of your filling package.

Your harness timing, too, will affect the cloth skips. On C or W looms, time the harnesses to cross at 2¼ ins. from the beat of the cloth (front-center position of the lay).

An article [TW, Sept., '52, p. 93] on this subject may give you more ideas.

Ply Knots Are Undesirable In Sewing Threads

Technical Editor:

What is the basic construction of sewing thread, and what is a ply knot? (9805)

Sewing threads are made as plied thread and cabled thread. Plied threads are made by twisting single ends and plying two or more of the single ends to form the finished thread. Cabled threads are two or three single threads plied and twisted to form a final ply. Cabled threads range from 2 to 12 plies.

A ply knot is a group knot that ties all of the plies in the plied thread at one time. This knot is also known as a whole knot. A knot in any of the individual plies of the plied thread is a yarn splice. The ply knot is objectable in sewing thread because of its size and inability to pass through the needle eye without breaking. The knot in the individual ply will generally pass through the needle eye.

Nylon Filter Cloths Made From Filament, Staple Yarns

Technical Editor:

Can filter cloths be made from spun nylon yarns? If so, what spinning system is used and what are the cloths used for? (9806)

Nylon filament yarn and staple yarn spun on the woolen system are used for making filter fabrics where high chemical and mechanical resistance is essential. These filters are inert to ketones, alcohols, carbon bisulfide, carbon tetrachloride, trichlorethylene, benzene, aldehydes, most common alkalis, and all organic acids except formic and phenol acids. However, nylon is degraded by oxidizing agents and mineral acids; so high temperatures must be avoided.

The abrasion resistance of nylon filter fabrics is the best of all filter fabrics. The heat resistance is good with a melting point of 480° F.; but combinations of temperatures, concentration of liquids, and the chemical compound have a varying effect on the stability of the cloth.

Nylon filters are generally preshrunk and will withstand temperatures of about 212° F. without further shrinkage. Nylon filter cloth resists fungi and retains 97% of its strength. Cotton under the same conditions is completely destroyed. Molds will grow on nylon, but not readily.

The smooth surface of the nylon cloth, particularly the continuous filament-yarn cloth, greatly facilitates cake discharge. Nylon filter cloths are made in standard filter-cloth constructions.

Marksway Cloth Is Waterproof

Technical Editor:

What is a Marksway cloth? (9809)

Marksway cloth is a fabric recently developed in England for life-saving and similar devices. A special finish gives a suede-like hand on both face and back of fabric. The fabric becomes waterproof on contact with water.

The fabric is made from two-ply combed mercerized yarns in the warp and filling. The construction is a modified plain or oxford weave. The thread count is 122 ends per inch in the warp and 96 ppi. in the filling. The color is usually gray-tan.

Beam Flanges Are Kept To Close Tolerances

Technical Editor:

What are the tolerance limits for beam barrels and flanges? (9810)

One manufacturer of tricot, section, and loom beams holds the maximum eccentricity of barrel tolerance to 0.012 ins. total indicator reading. The maximum run-out of the flanges at the outer edge is kept to a tolerance of 0.10 ins. total indicator reading.

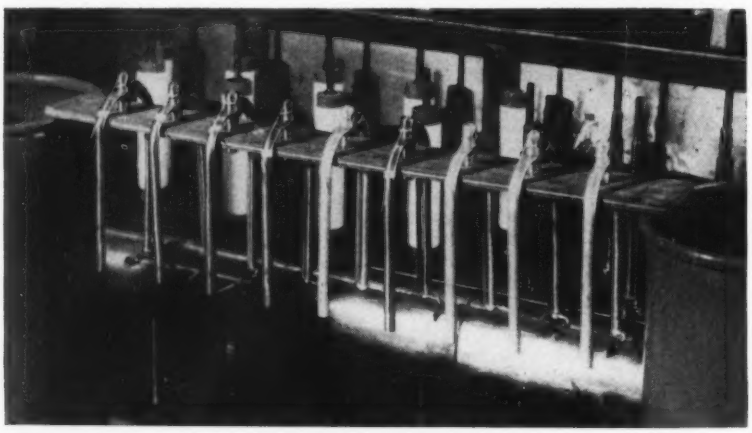
Kinks AND SHORT-CUTS

Roving-Flyer Test Measures Corrosion Effect of New Fibers

Are synthetic fibers corroding your machines? Some mills have found equipment corroded and need to know if the fiber is at fault or if other processing conditions are the cause. Here's a test that will answer the question.

Equipment You'll Need

1. A room in which relative humidity can be varied from 60 to 70% and temperature kept constant at 80° ±2° F.
2. A roving frame equipped with steel flyers that have no finish or coating on them or can be cleaned with emery cloth
3. A stand that will hold nine flyers for storage
4. A conditioning oven in which temperature can be controlled between 80 and 90° F. and relative humidity between 65 and 70%
5. Extra-fine emery cloth
6. Masking tape



CLEAN FLYERS are taken from the roving frame after the frame has been run for 30 mins. at high humidity. Roving is held in contact with the flyer by masking tape, and the flyers are set on a special stand for conditioning in an oven.

How To Run the Test

1. Process the fiber to be tested through drawing and have it ready for roving.
2. Clean, with extra-fine emery cloth, the tops and pressers of nine flyers to remove rust, paint, and finish.
3. Raise the relative humidity in the room to 70% at a temperature of 80° ± 2° F.
4. Using the flyers from Step 2 above, process the sliver into roving. Run the roving frame for 30 mins. from the time all ends are pieced up, and then stop it. If fibers lap up on top rolls because of the high humidity, lower the humidity to where processing is possible. But the test may not be reliable at less than 65% r. h.
5. Cut 18 ¼x2-in. strips of masking tape, and then stick one end of each strip to the metal cover of the drafting rolls.
6. Break the roving near the front roll, insert a few additional turns by hand, and fasten the roving under slight tension to the arm of the flyer with a small piece of masking tape. Repeat this procedure for all nine flyers.
7. Unwind about 3 ins. of roving from the bobbin, break it, and insert a few additional turns of twist. Fasten

HEAVY CORROSION is indicated by a dark line just where the roving was held in place.

LIGHT CORROSION is more difficult to detect and is indicated by a lighter line under the roving.

the roving under slight tension to the blade of the presser with a strip of masking tape. Repeat this procedure for all nine flyers.

8. Transfer the flyers to the stand intended for storing them in the conditioning oven.

9. Set the dry-bulb temperature in the oven at 80° F. and the wet-bulb temperature at 70° F. If you can't maintain a wet-bulb temperature below 80° F., you can use a dry-bulb temperature of 90° F. and a wet-bulb temperature of 81° F. (If a conditioning oven is not available, you can conduct the test in a room where dry-bulb temperature is 80° F. and wet-bulb temperature is 70° F.)

10. Place the stand holding the flyers in the oven or room and leave it there for 48 hrs. Be sure to maintain constant conditions for the duration of the test.

11. Take the flyers out, remove the masking tape, and pull the roving out.

12. Check the top and presser of each flyer, and enter your results on the corrosion-test form illustrated.

				Corrosion Test		
	None	Light	Heavy		Time in	Time out
Top				Date		
Presser				Hour		
				Operator		

TEST FORM shows length of oven conditioning (usually 48 hrs.) and corrosion effect on both flyer top and presser.

How To Judge Corrosion

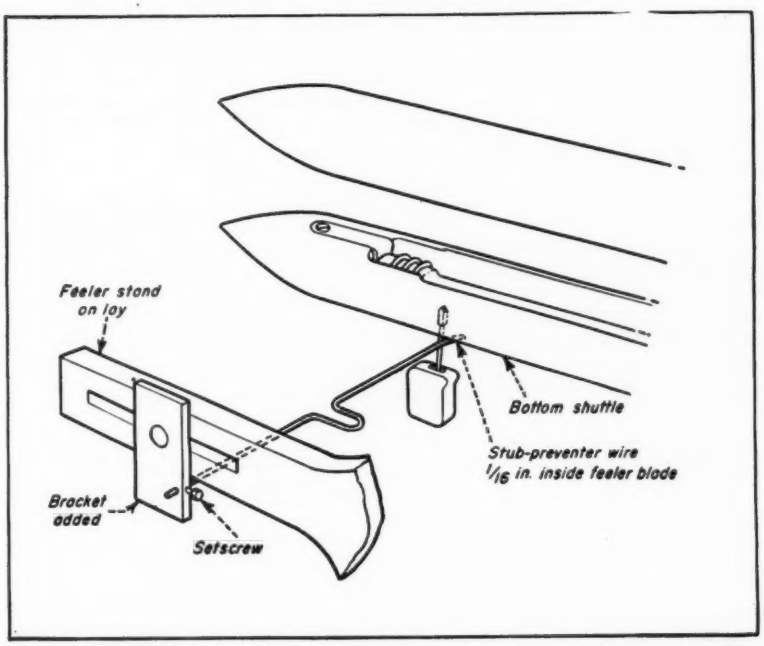
Heavy corrosion is indicated by a thick, dark-brown line under the roving.

Light corrosion is indicated by a partly broken and/or light-brown line of corrosion under the roving.

No corrosion is indicated by no mark under the roving. In some cases, the top and presser are corroded all over except under the roving, and this condition is considered as no corrosion as far as the fiber is concerned.

Some tests show very constant results for all flyers, and others show some difference in the degree of corrosion on different flyer tops and pressers. In general, however, very reliable results have been obtained. In most cases, the results of tests on flyers have been verified by the results obtained in the laboratories of synthetic-fiber producers who used other methods. *P. C. Kochhar, School of Textiles, N. C. State*

We Stopped False Transfers on Filling-Mixing Looms



FALSE CHANGES are prevented by the stopping action of the stub-preventer wire. The bottom feeler blade starts to flick when the shuttle box drops; the stub preventer stops the movement. The feeler can work normally when the lay moves backward.

We have a group of Draper looms with box-motion attachments running as 2x1 filling-mixing looms. We're running filament acetate yarns and have a lot of trouble with the bottom feeler. If the feeler tip is sharp, it will cut the filaments of the yarn; if the tip is blunt enough to prevent cut filaments, the loom transfers partially full bobbins (which we call "stubs").

We have almost overcome this trouble by adding a stub preventer to our looms.

A section of $\frac{3}{16}$-in. wire is cut and is bent near the center to form a U. The wire is much the same in shape as the connecting wire used on the feeler motion on regular Draper looms. Usually we use a top-harness wire (leader wire) to make this piece.

A small bracket is made and bolted on the regular feeler stand at the lever end of the breastbeam. The bracket has a hole bored for the attaching bolt. Another hole is bored for the $\frac{3}{16}$-in. wire. A hole is bored into the wire hole and perpendicular to it. This hole is tapped for a setscrew that is used to adjust the wire.

The wire is inserted in the hole in the bracket, with the wire in a position below the regular feeler stand. The loom lay is pulled to the front-center position, and the wire is extended from the bracket to the inside (toward the lay sword) of the blade of the bottom feeler.

The end of the wire is curved toward the lay sword slightly so that the wire will be sure to miss the feeler blade as the lay moves back and forth. The bracket is moved in the regular feeler stand so that the wire is $\frac{1}{16}$ in. inside the feeler blade. The curve in the end of the wire is set approximately $\frac{3}{4}$ in. past the feeler blade with the lay still at front center.

The finished stub preventer works this way:

1. The shuttle box drops down to bring the top shuttle level with the race plate.

2. The movement of the bobbin of filling in the bottom shuttle box

tends to flick the bottom feeler over toward the electric contact wire, which would cause a false change.

3. The lay is at front center when the feeler blade starts its flick, and the blade strikes the stub-preventer wire. The wire stops the blade movement and prevents a false change.

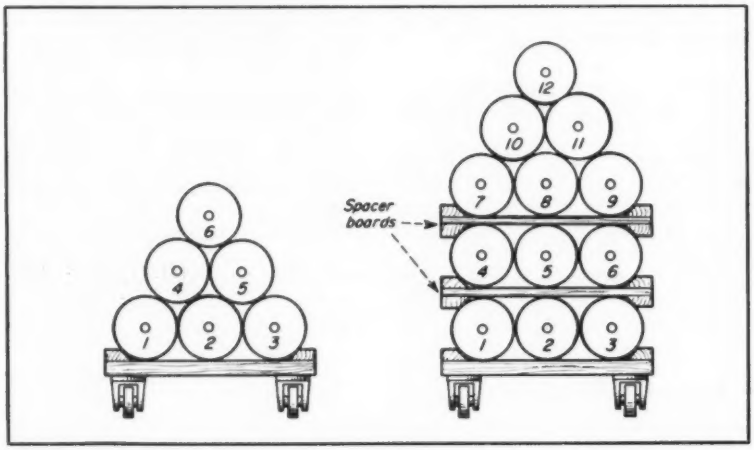
4. The lay moves backwards, and the feeler blade leaves the parallel position of the stub-preventer wire. Then the feeler can slide along an empty bobbin to make a normal contact for a bobbin transfer.

There are no disadvantages to the stub-preventer attachment. During normal loom operation, the bottom feeler blade misses the stub-preventer wire completely. But when the shuttle boxes drop down, the wire gently stops the flick of the bottom feeler and prevents false changes.

Now the feeler tip can be run blunt enough to prevent filament cuts.

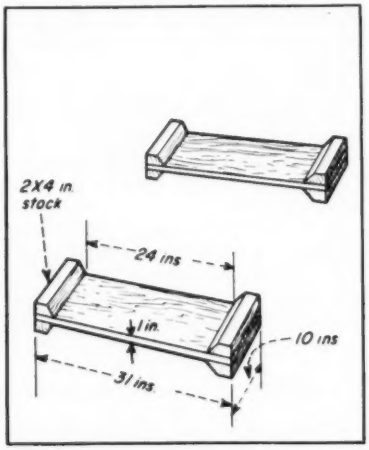
The attachment is quickly made and the cost is small. *Melvin R. Williams, Scranton, Pa.*

We Doubled the Capacity of Our Cloth Trucks



BEFORE only six rolls could be stacked on a truck, but . . .

AFTER twice as many can be stacked with the spacer boards.



SPACER BOARDS are made from 1x10-in. stock cut to fit the truck width and fitted with beveled 2x4's at each end, top and bottom.

Because some of our doorways are narrow, we formerly had to stack our cloth rolls lengthwise on a conventional hand truck. When we pyramided the rolls, we could get only 6 large or 10 small rolls on at once.

Spacer boards that we designed ourselves now enable us to get twice as many rolls on a truck.

A piece of 1x10-in. board was cut the same width as the truck, 31 ins. Four pieces of 2x4-in. stock were beveled and screwed to the ends of the board, top and bottom, as shown in the sketch.

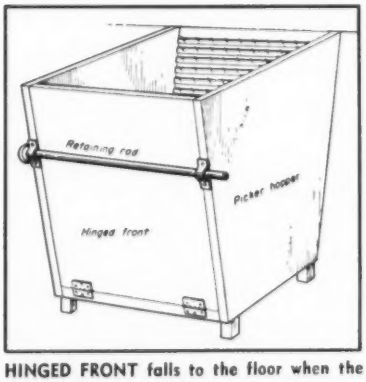
Two of the spacer boards are put on top of the first three cloth rolls, one board at each end. Then we have, in effect, a new floor.

Another set of spacer boards is put on when six rolls are on the truck, and the rest of the rolls are pyramided.

The spacer boards are also used to stack cloth rolls on the floor without the wasted space created when ordinary pyramids are made.

Trips to the cloth room have been cut in half; so the employees who truck the cloth are enthusiastic about the new system. *Leo J. Roberge, Providence, R. I.*

Hinge Picker-Hopper Front To Reduce Fire Damage



HINGED FRONT falls to the floor when the retaining rod is pulled out. Apron damage is minimized because burning cotton is removed quickly.

When a fire occurs in a picker hopper, the best thing to do is to get the cotton out fast to prevent damage to the spiked apron.

But it is ordinarily difficult to reach into a hot hopper and pull the cotton out.

We've hinged the front of our hoppers, and burning cotton can be easily raked out on the floor.

A rod about two-thirds of the way up holds the front in place but can be removed quickly in case of fire.

The arrangement costs little and pays for itself after one fire. Not only are the aprons saved from damage, but replacement time and labor are also eliminated. *James R. Wikle, Sr., Charlotte, N. C.*

Worsted Carder Grinds Fancy When Clothing Is Changed

Some carders think you should put on new fancy clothing to prevent damage to new wire when the cylinder has been reclothed.

All I do is grind the fancy with a carborundum wheel, and I've already saved a lot of money. The cylinder clothing isn't hurt at all.

Tag Cloth Trucks

Cloth trucks at Cone Mills' White Oak plant now have tags on them to designate yardages. Different lengths of cloth are now put onto the correct truck without hesitation.

upatree?

Many a textile manufacturer has found himself up-a-tree when it comes to solving lubrication problems that are hampering his entire operation. Many a textile manufacturer has been rescued from this bothersome situation by the expert services of a Cities Service Lubrication Engineer coupled with the complete line of Cities Service lubricants. Why not let a Cities Service Lubrication Engineer make a quick, accurate lubrication survey for you? It will cost you nothing and can save you many dollars in operating costs. Call your nearest Cities Service Office or write Cities Service Oil Company, Sixty Wall Tower, New York 5, N.Y.

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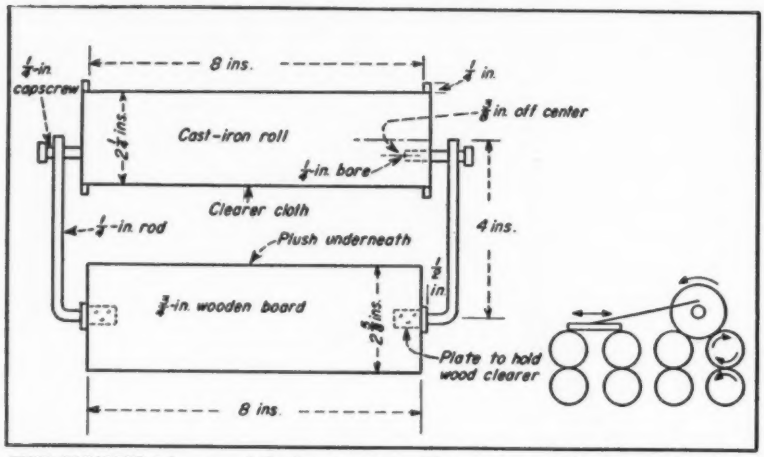
Kinks and Short-Cuts

Try These Clearers On Four-Roll Drawing



TWO CLEARERS take care of the four top rolls. The cast-iron roll is covered with clearer cloth and rides in the slot over the third and fourth rolls. The oscillating front clearer is driven by arms set eccentrically in the cast-iron roll.

A combination of revolving and oscillating clearers on our four-roll breaker drawing is proving to be very efficient.

A 2¼-in. cast-iron roll covered with clearer cloth rides in the slot between the third and fourth rolls.

A flat wooden clearer covered with plush is driven from the cast-iron roll to oscillate ⅜ in. forward from center and ⅜ in. back, for a total oscillation of ¾ in.

The top rolls and bottom steel rolls are kept in plain view when these clearers are used, and we've found that rolls that you can see easily are kept cleaner by the operators.

Of course these clearers do their main job of clearing very well, and the extra visibility is an added advantage. *W. J. Cordell, Whitnel, N. C.*

Here's an Idea for Swatch-Book Keepers

We keep a color book of active piece-dye shades and formerly mounted samples eight to a page. The pages were kept in a loose-leaf binder, but a full page couldn't be discarded until the last color was obsolete. New shades had to be withheld until a group of eight was ready.

Now we use a loose-leaf page that holds ten removable tabs. All colors are handled individually, the sample books aren't so crowded, and colors are easier to find. *Edward Waller, Danville, Va.*

How To Splice Damaged Heating Elements

With some elementary knowledge, you can save money by salvaging your damaged heating elements. Since standard 50-50 solder melts as soon as the element is heated to a cherry red, a solder with a higher melting point should be used.

We have been using silver solder successfully. However, this type of solder cannot be made fluid with an ordinary soldering iron and requires the higher heat of a gas torch burning acetylene or similar gas.

To repair the damaged element, clean the ends of the damaged section with sandpaper, emery cloth, or a knife blade.

In order to prevent the ends from springing apart because of expansion during heating, wrap a fine wire around the paralleled element ends. Apply the torch flame to the spliced ends until the joint glows faintly, and sprinkle a little borax on the point that is heated to an approximate straw color. Then apply the silver solder. Hold the flame at the distance that causes the solder to flow smoothly along the joint. *Paul C. Ziemke, Oak Ridge, Tennessee*

$500 for Best Kink in 1954

$25 for Best Kink in Each Month

In Addition to Space Payment on Acceptance

You undoubtedly know many Kinks and Short-Cuts that are helpful to mill operators. Write them down and send them in. We pay promptly on acceptance—before publication. In addition, your Kink may win the $500 check for the best Kink of the year or the $25 check for the best Kink of the month; maybe both!

Send in your Kink now. There is always a contest going on. The more good Kinks you send in, the better your chances of winning a prize in addition to earning some easy money for every Kink accepted.

We will polish up your writing and will have an artist make finished drawings. But send in plenty of details so that your Kink can be clearly explained. Be sure your sketch is clear and well labeled, but it need not be a polished job. Best of all, send us a good glossy photograph of it; we will pay you extra if you do and we can use it.

Look over the Kinks in this and other issues. You will get ideas you can use as well as inspiration for Kinks you can send in. We like items that pertain to ways for improving machines, new devices that a mill man can build, attachments or methods of merit—anything that will cut costs, improve quality, or help production.

Your published Kink will be judged impartially by other mill men. In cases of ties, duplicate prizes will be awarded.

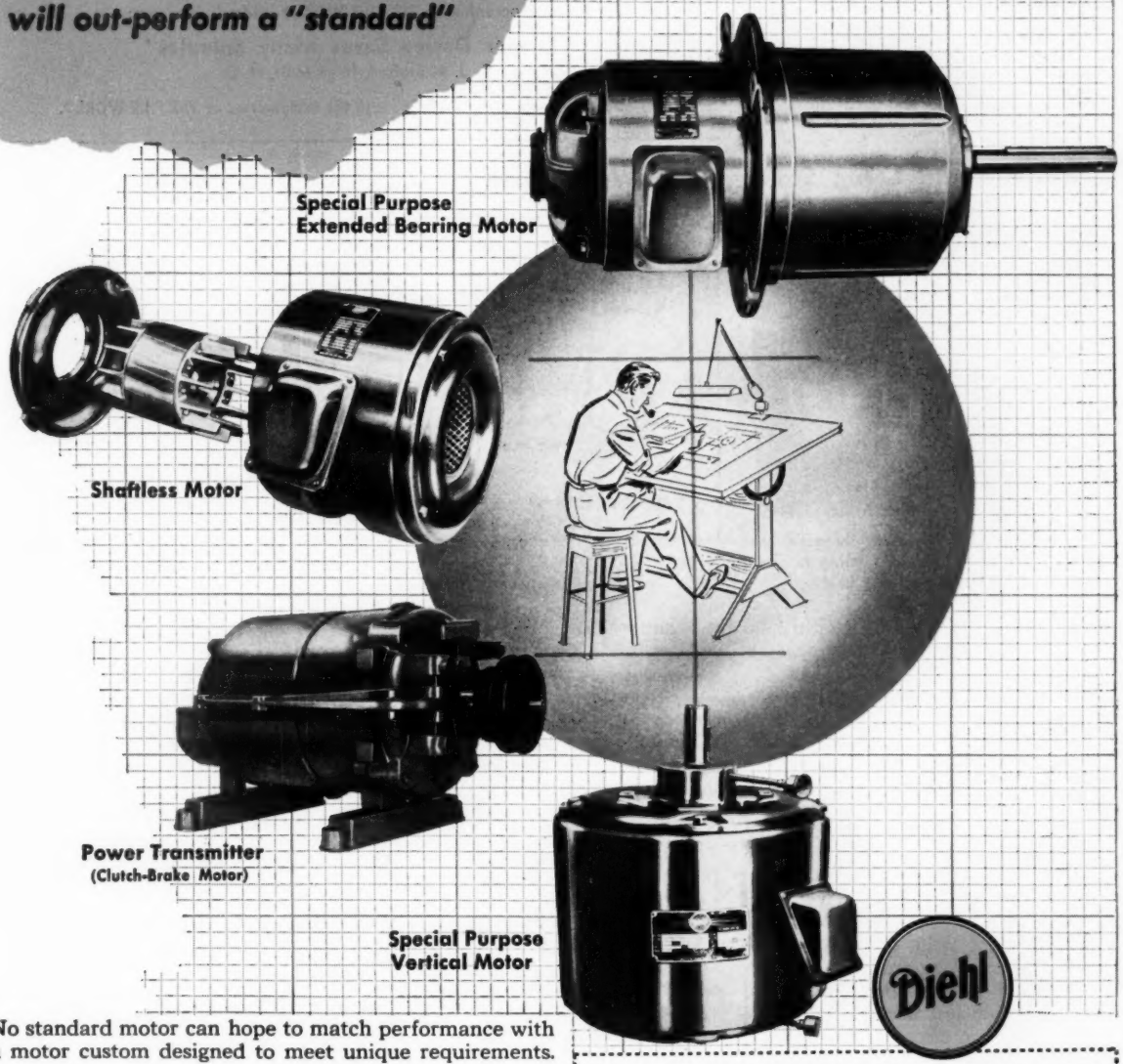
RULES OF CONTEST

1. No limit to number of entries.
2. New $25 prize contest every month, $500 prize contest for the year. Monthly contest confined to Kinks published that month, yearly to those published in calendar year 1954.
3. All Kinks paid for on acceptance; extra payment for photographs. Drawings need not be finished (clear detailed pencil sketches will do).
4. Previously published material not eligible for prizes.
5. Unless you advise to contrary, we assume we may sign your name to Kink when published.
6. Prize winners will be selected by readers, a different group each time. At least 200 will be asked to select preferred Kinks in each issue. Their votes will select the best Kink, and their decision will be final.

Send Kinks to:
KINKS CONTEST, TEXTILE WORLD
201 E. Coffee St., Greenville, S. C.

a motor designed for its job

will out-perform a "standard"



No standard motor can hope to match performance with a motor custom designed to meet unique requirements.

That's why Diehl lays so much emphasis on custom construction . . . why, through the years, it has geared its abilities and its facilities, its design, engineering and manufacturing functions for maximum cooperation with its customers . . . whatever the application.

DIEHL **custom-tailored motors can:**

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For more information, write direct or use Reader Service post card.

Kinks and Short-Cuts

Use Stairs While Painting

If your stairs need painting and you can't find any time when they're not being used, try this trick.

Paint every other step, and continue to use the unpainted ones. If you want to be doubly sure, put wax paper over the damp paint to keep dirt off. The wax will wear off quickly after the paper is torn off.

Next day, paint the other steps, and you'll have done the job without paying overtime. *W. F. Schaphorst, Newark, N. J.*

Best-Kink Award for June

Each month TEXTILE WORLD awards $25 to the submitter of the Kink judged by a panel of over 200 practical mill men as the best for that particular month. A new batch of Kinks appears each month, and a new group of readers acts as judges each month.

If you are asked to judge one of these days, be sure to help select the best Kink by sending back your answer in time for final tabulation. Closing date for judging is the last day of the month in which the Kink appears.

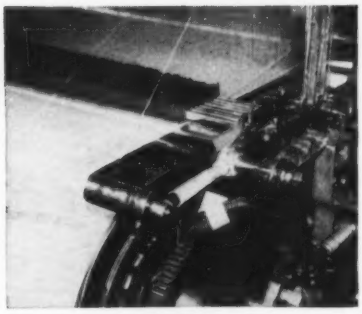
The best Kink for June, according to TEXTILE WORLD reader-judges, was:

"Twister Device Saves Many Spindles"

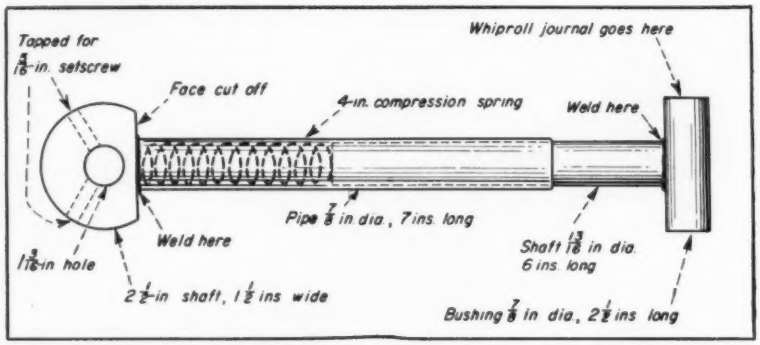
By J. A. Braffod, Hope Mills, N. C.

Mr. Braffod is being sent a check for $25 with the compliments of TEXTILE WORLD.

This Whiproll Setup Stopped Our Wavy Cloth



WAVY-FREE CLOTH results because the yarn causes the whiproll and spring to compress the same amount at each beat-up.


Tapped for 3/8-in. setscrew
Face cut off
4-in. compression spring
Whiproll journal goes here
Weld here
Pipe 7/8 in dia., 7 ins. long
Weld here
13/16-in hole
Shaft 13/16 in dia. 6 ins. long
2 1/2-in shaft, 1 1/2 ins wide
Bushing 7/8 in dia., 2 1/2 ins long

A ROCKING MOTION is obtained when the yarn presses against the whiproll and the 13/16-in. shaft presses against the spring.

We were weaving a light satin fabric from second-grade 150-den. bright rayon. The fabric, which had 60 ends and 64 ppi., was wavy and uneven.

We checked over our let-off and take-up motions and put them in perfect condition, but the cloth was still wavy.

We solved the problem by rearranging our whirolls.

First we cut a 1½-in. length of 2½-in.-dia. shafting. We bored a 1 3/16-in. hole in the center of the shaft. Two other holes of 3/8-in. dia. were bored in the sides and tapped for setscrews.

A second length of the 2½-in. shafting was made just like the first.

To these two pieces of shafting, we welded a 7-in. length of ⅞-in. pipe. We put a 4-in. length of light compression spring in each pipe.

Then we dismantled a whiproll assembly in a loom. We removed the whiproll cam-follower hub, the two short crank arms at each end of the whiproll, and the two whiproll arms.

Because the whiproll was a few inches shorter after these parts were removed, we turned down the 1 13/16-in. surface on each end of the whiproll shaft 3 ins. more.

Then we fastened the 2½-in. shafting we had made to the whiproll shaft.

We cut a piece of 13/16-in. cold-rolled steel and welded it to a brass bushing with an inside diameter the same size as the whiproll journals.

A second piece was made exactly like the first.

These two pieces were slipped over the whiproll journals; and then the ends were inserted into the pipes welded to the shafting fastened to the whiproll shaft.

This setup eliminated the oscillating whiproll. The resulting arrangement gives a gentle back-and-forth movement to the whiproll.

We put our first attachment on a loom that had been making only B- and C-grade cloth for two weeks. We immediately got A-grade cloth because the unevenness cleared up right away.

Now, we use this setup on all our looms that weave satin fabrics. We use heavy and light spring sizes, depending on the weight of the fabric being woven and the amount of warp tension required.

The only disadvantage we have found to the arrangement is that the warp has to be slackened when the springs are changed to a light or heavy type. But we have partly overcome this trouble by learning what weight spring we need, and we put in this spring when a new pattern is put in the loom. *C. M. Whitcher, Midland, Ont.*

Select Belt Fasteners According to Conveyor Duty

Most conveyor belts are joined with metal fasteners of various types because they are easy to install and need few special tools or skills. Each type of belt requires special fasteners.

For light- and medium-duty belts, staple-type fasteners are excellent. They are quickly applied by driving and clinching the staples or by using individual split rivets. Although fasteners of this type fit tightly in the holes they make, it is a good idea to seal these holes with rubber cement to prevent moisture from reaching the belt carcass.

Hinge-pin fasteners are particularly suited to flat belts and package conveyors. Heavy-duty service requires double-plate, bolted fasteners. Punched holes no larger than a close fit are required for this type of fastener. The inside of the punched holes should be carefully cemented before the bolts are inserted to keep water or moisture from the carcass. *A. F. Matheis, New York, N. Y.*

More Efficient Spinning...

for wool . . . .SYTON

for blends . . . .SYTON

for synthetics . . . ...SYTON

This spinning and finishing agent increases yarn strength, ups efficiency, imparts good hand.

for wool . . . . . Syton increases yarn strength up to thirty percent. Enables you to spin to lighter, finer counts, making a variety of new constructions possible. Helps you produce more uniform, condensed rovings. Gives you a stronger yarn with less twist. And that isn't all, you get other advantages, too: less fly and waste, fewer ends down, faster machine speeds.

for blends . . . . . Syton gives you a more uniform yarn. Strength is increased, production speeded, dyeing more uniform, quality improved.

for synthetics . . . . . Syton produces a dry, crisp hand like that of worsteds. It improves slippage control on filament-type fabrics. It gives valuable special effects on nylon marquisettes, rayon linings, taffeta and many other fabrics. It improves color, imparts better drape.

for more information on . . . write for booklet, "Profitable spinning of wool and wool blends with Syton," to Inorganic Chemicals Division, MONSANTO CHEMICAL COMPANY, 1700 South Second Street, St. Louis 4, Missouri.

Syton: Reg. U. S. Pat. Off.

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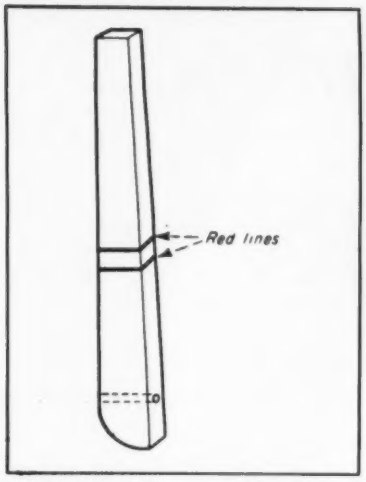
Serving Industry . . . Which Serves Mankind

Kinks and Short-Cuts

Gauge Your Picker Sticks At Lug-Strap Positions



MARK TWO LINES on new picker sticks with a gauge to show the correct position of the lug straps.

We run the lug straps on our Draper, Northrop, and Crompton & Knowles looms in one position constantly. The lug straps on each type of loom are set in one position on the picker sticks, and all other looms of the same kind are set to the same measurement.

To determine the height of the lug strap, we use a gauge and mark two red lines on the picker sticks. As soon as we receive a shipment of picker sticks from the manufacturer, the gauge is placed on each stick; and the sticks are marked before they are put into the main stock of sticks.

Sticks marked this way help two ways:

1. They show the loomfixer exactly where to position the lug strap when a new stick is put on the loom.

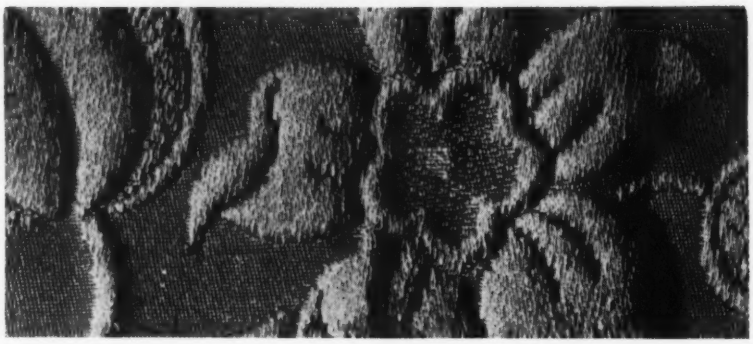
2. A loomfixer can tell at a glance whether a bang-off is caused by a too-high or too-low lug strap. *C. E. Popper, Haifa, Israel*

Use Rubber Tubing To Free Stuck Nuts

A rusted nut that requires oil soaking before it can be loosened can be treated by using a simple piece of equipment—a 4-in. length of rubber tubing.

Slip one end of the tubing over the nut and hold it in place with a tight rubber band. Fill the tube half full of thin oil, and close the top with an elastic band to put the oil under pressure. The nut will be free in a short length of time. *W. E. Warner, Essex, England*

Use Wet Filling Yarns for Beautiful Upholstery Cloth



PLENTY OF PUCKERS show in the finished upholstery cloth because the cotton filling yarn was woven into the cloth while wet. Then the cloth was dried in our oven.

We weave upholstery fabrics. Because the beauty of this material depends on the puckered effect of the finished material, we have done a lot of experimenting on making the figures of the patterns stand out from the ground weave.

We now use a method in weaving that improves the appearance of our cloth. The cloth is usually made with two types of filling. One type of filling is a heavy filament yarn, and the other is a cotton or flax yarn.

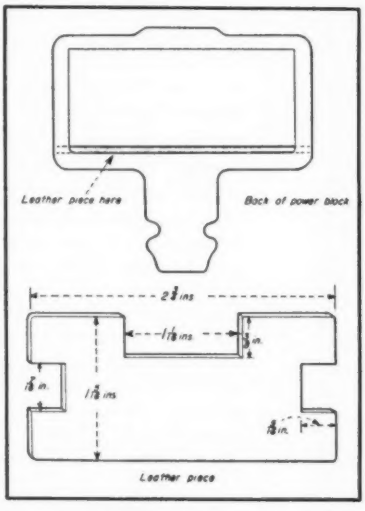
We soak the cotton yarn or the flax yarn (whichever is being used) in a solution and put it into the shuttle while it is still wet.

As soon as a roll of cloth is woven, it's removed from the loom and put into a dryer. The cloth is left in the dryer for 1 hr. at 125° F.

The dried cloth shows a beautiful puckered surface.

The only disadvantage to the method is that care has to be taken to prevent the yarn from becoming too wet before it is placed in the shuttle.

Extra Leather in Power Block Protects Lug Strap From Wear



THE LUG STRAP is protected from wear by a small piece of whittled-out leather that is self-holding in the bottom of the enclosed power block.

We're using the enclosed-type power blocks (lug holders) on our Draper Looms. The leather at the picker sticks protects our lug straps from wear at this point, but the lug straps wear on the bottoms where they rub against the malleable iron of the power blocks.

To stop this wear, we have designed and cut small pieces of oak-tanned leather to fit in the bottom of the power blocks. The leather is 1⅞ ins. wide and 2¾ ins. long. We cut a notch in each end ⅞ in. wide and ⅛ in. deep. These notches are for the sides of the power block.

Another notch is cut in the center of one side 1⅞ ins. long and ⅜ in. deep. This notch is just wide enough and deep enough to miss the picker stick.

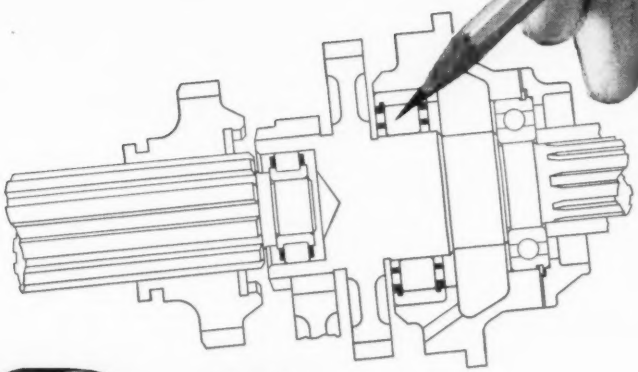
The finished leather pieces are scotched into the bottom of the power block with the cut side next to the picker stick. The notched ends hold the leathers firmly in the power blocks without other attachments.

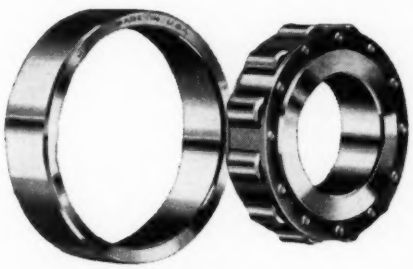
The lug straps ride back and forth on the leather blocks, and wear to the straps is completely eliminated. The leather lasts indefinitely.

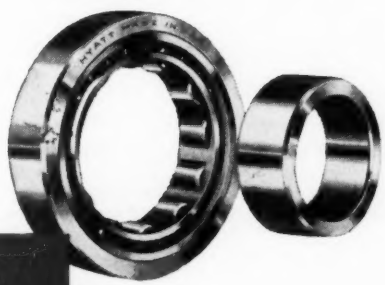
Our lug straps now last much longer. *J. Warner Holley, Kansas City, Mo.*

when LIMITED SPACE is a design factor

HERE'S HOW HYATTS HELP...







Sometimes a fraction of an inch is the difference between a simple design modification and costly re-tooling. And the engineer who is thoroughly familiar with Hyatt Roller Bearings will know a lot about how to save those fractions. He'll know, for example, that to gain greater shaft rigidity with the same size housing, he need only check his Hyatt catalog for a separable inner race type of bearing. This type—available in a wide range of sizes—may be applied with the rollers operating directly upon the surface of a suitably hardened and ground shaft. Thus, a larger-diameter shaft may be used without sacrificing bearing capacity, or a larger-size bearing may be used without changing the size of the shaft. For a copy of Hyatt's latest catalog, No. 150, write to Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey.

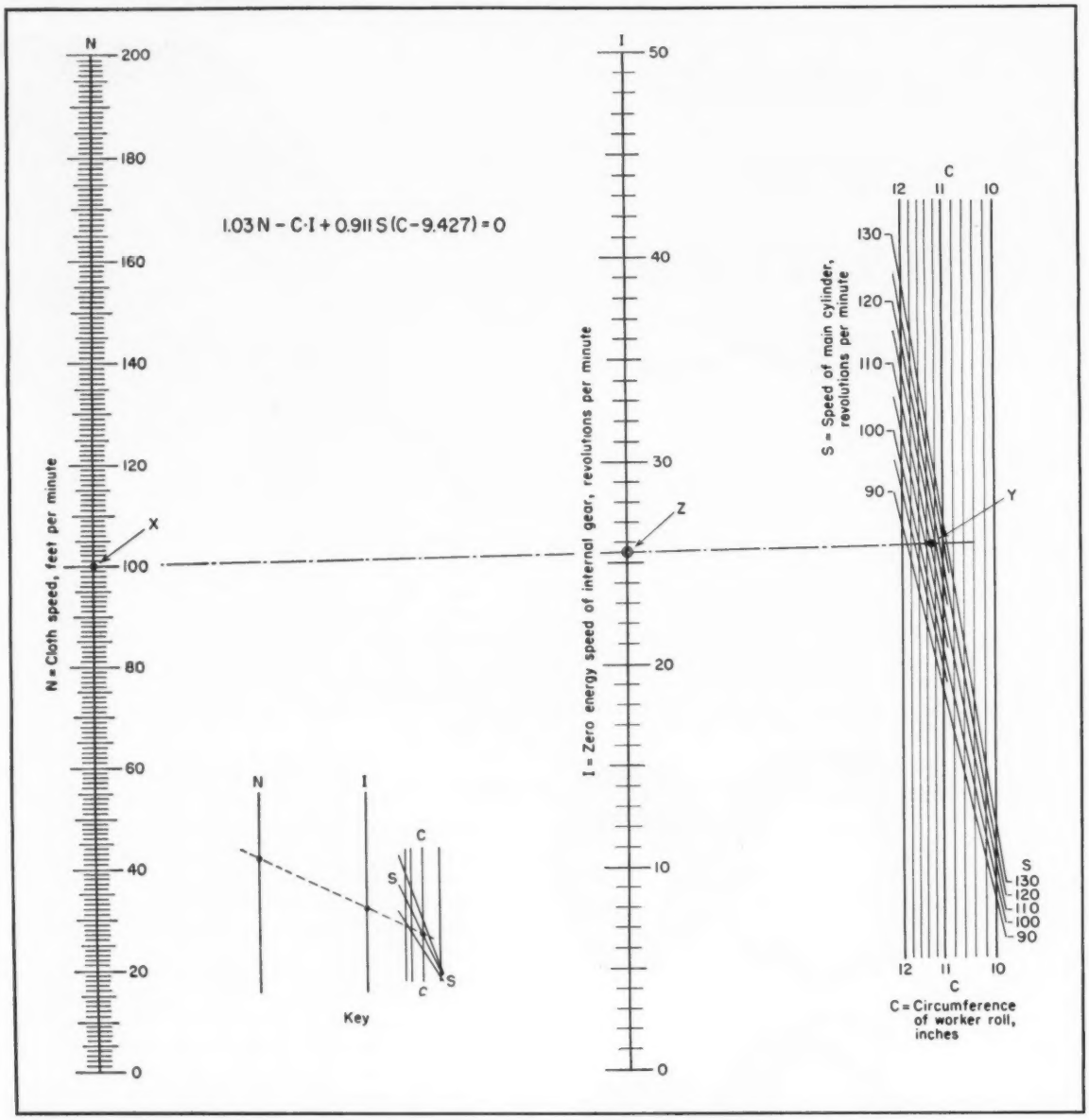
HYATT ROLLER BEARINGS

STRAIGHT BARREL TAPER

For more information, write direct or use Reader Service post card.

Kinks and Short-Cuts

Zero-Energy Napper Speed Determined by Nomogram


1.03 N - C·I + 0.911 S (C - 9.427) = 0
N = Cloth speed, feet per minute
I = Zero energy speed of internal gear, revolutions per minute
S = Speed of main cylinder, revolutions per minute
C = Circumference of worker roll, inches
X
Y
Z
Key

INTERNAL-GEAR SPEED for zero energy is determined this way. On left scale locate cloth speed—100 ft. per min. in this example. On right scales, locate point where worker-roll circumference (vertical lines) crosses main-cylinder speed (slanted lines). In the example, the worker roll measures 11.3 ins. with new clothing. Cylinder speed for the 80-in., 24-roll napper is 110 rpm. Join the two points you've located, and read where the line crosses the center scale. Internal-gear speed for zero energy is 25.7 rpm. in this case.

To get maximum napper production, you've got to know the zero-energy point. Ordinarily this figure must be calculated, and the mathematics are not too simple.

That's where this nomogram developed for David Gessner Co. comes in. All you have to know is cloth speed, worker-roll circumference, and cylinder speed. Here's how it works.

On the left scale, locate cloth speed (feet per minute). This is point *X*.

On the right scales, locate the point where worker-roll circumference (inches) intersects main-cylinder speed (revolutions per minute). This is point *Y*.

Join *X* and *Y*, and the point where this line crosses the middle scale is point *Z*. *Z* is the zero-energy speed of the internal gear (revolutions per minute).

In case you're interested, the nomogram is based on this formula:

$$1.03(N) - (C)(I) + 0.911\ S\ (C - 9.427) = O$$

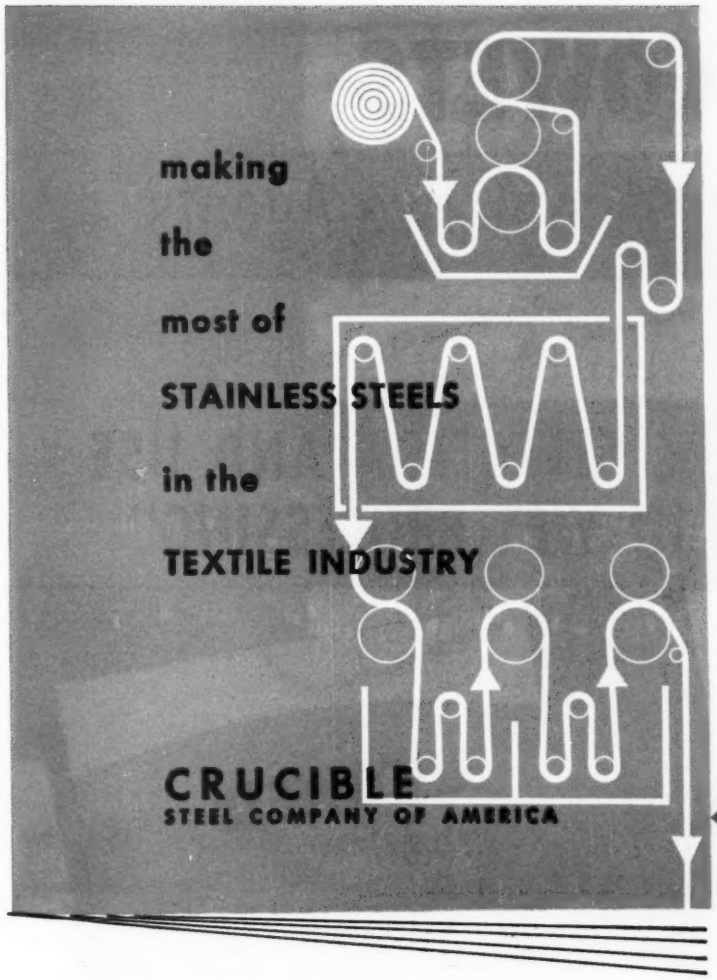
where *N* is cloth speed (ft. per min.)

C is worker-roll circumference (ins.)

S is main-cylinder speed (rpm.)

I is zero-energy speed of internal gear (rpm.)

With the nomogram, a wide range of fabrics can be accurately napped by less-skilled operators. *Douglas P. Adams, Massachusetts Institute of Technology*



NEW BOOK SHOWS HOW *from dyehouse to loom*

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Dye vats...mixing tanks...slashers...shuttle tips—the great and growing list of stainless steel applications in textile mills highlights the *progress with profit* made possible by the wide family of stainless alloys.

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Crucible Steel Company of America
Dept. TW, Henry W. Oliver Building
Pittsburgh, Pa.

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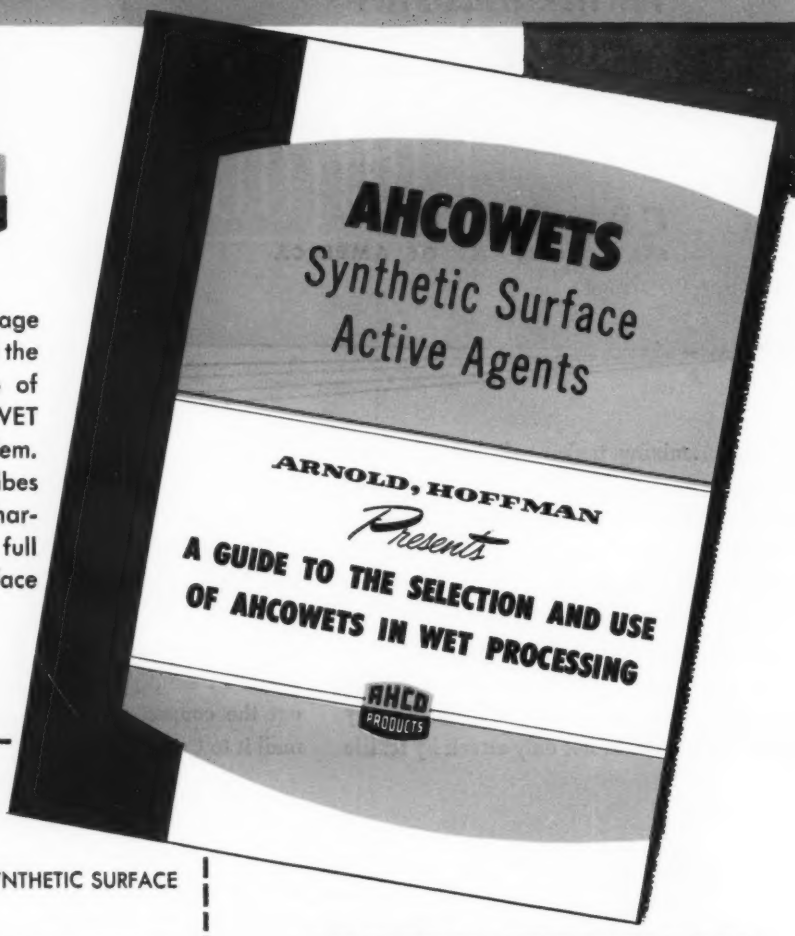
AHCOWETS

Synthetic Surface Active Agents

"A GUIDE TO THE SELECTION AND USE OF AHCOWETS IN WET PROCESSING"

AHCO PRODUCTS



Condensed into a four page booklet is information to aid the dyer or finisher in his job of selecting the proper AHCOWET for any wet processing problem. This technical booklet describes in detail the properties, characteristics and uses of the full line of Ahco Synthetic Surface Active Agents.

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New Dyes & Chemicals
New Useful Accessories
Editorial Articles
and the Advertisements

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Outstanding TRADE LITERATURE *Free for the Asking*

NO REPEATS . . . Listed here for August are current bulletins reviewed by the editors of TEXTILE WORLD. To get the ones you need, circle the number on the Reader-Service card, as described on the preceding page.

TEXTILE MACHINERY

A fully automatic radial quiller is described in a brochure from Abbott Machine Co., Inc. Full bobbins of yarn are delivered automatically to pinboards. The quiller is designed especially for mills running a wide variety of yarns and yarn numbers. **(F-1)**

A high-speed warper is described in a brochure from Cocker Machine & Foundry Co. The warper is spindle driven and designed to handle large section beams with 36-in.-dia. heads. The beam is driven from both ends, and the loading and unloading are done by air pressure. **(F-2)**

Twister coners and take-up machines are described in a brochure from Universal Winding Co. The twister coner combines twisting and coning in one operation. Four take-up machines for winding synthetic yarns onto large-diameter packages are described. **(F-3)**

A warp-drawing machine is described in a bulletin from Barber-Colman Co. The machine draws warps through the drop wire, heddle, and reed in a single continuous operation. The machine is available in 48-, 66-, and 86-in. lengths of entered reed space. **(F-4)**

An automatic cone winder is described in a bulletin from Foster Machine Co. The machine can be built with 120 spindles, and it increases production per hour per operator 100 to 300%. An automatic motor-driven tender travels around the machine on rails to pick up ends down and tie weavers' knots. **(F-5)**

Slashers are the subject of a brochure from Cocker Machine & Foundry Co. Problems in selecting slashers, such as how many cylinders are needed, are discussed. Size boxes and slasher heads are described. **(F-6)**

Twist setters and conditioners are described in a bulletin from Lydon Brothers, Inc. A twist-setting conditioning cabinet for quills, a fully automatic conditioner with cross-flow circulation and truck-loading features, and a conditioner with air-operated controls are shown. **(F-7)**

Textile finishing machines are described in a bulletin from Wiesner-Rapp Co., Inc. The machinery illustrated in the bulletin includes saturators, padders, slack washers, dyebecks, plaiters, dry cans, Barotors, creels, and shrink-and-rinse machines. **(F-8)**

A portable tufting machine is described in a leaflet from Ten-Tex Corp. The machine has a trolley, yarn holder, balancer, and a motor on the rail. The positive stitch control can be adjusted from 4 to 10 stitches per inch to sew 550 stitches per minute. **(F-9)**

Wet-processing machines for yarn and raw stock are described in a catalog from Smith, Drum & Co. Package dyeing on tubes, springs, Barber-Colman inserts, and beams is described. Extractors, dryers, hoists, and package-forming presses are shown. **(F-10)**

AUXILIARY EQUIPMENT

Web-guiding equipment is described in a brochure from Automatic Web Control Mfg. Co. Pictures show how ¾-in. waste at each side of a roll can be reduced to ¼ in. at each side. Various types of guiding jobs and installations are shown. **(F-11)**

Electrostatic charges are measured with a Statigun described in a bulletin from Herman H. Sticht Co., Inc. The instrument is portable, and the electrostatic charges are read in volts on the scale without making contact with the object under test. **(F-12)**

A textile wrapping machine with a self-measuring paper feed is described in a brochure from Package Machinery Co. One person can wrap 40 packages per minute with the machine. A single adjustment sets the machine to handle a wide variety of sizes. **(F-13)**

Narrow-fabric loom-beam installations are described in a brochure from Edward J. McBride Co., Inc. Typical loom-beam installations are shown on Riehl and Fletcher narrow-fabric looms. **(F-14)**

A double-apron drafting mechanism is described in a brochure from SKF Industries, Inc. The mechanism is better suited than the single-apron system for short fibers. The distance between the aprons and the drafting fields is adjustable. **(F-15)**

Tension controls are the subject of a bulletin from Walter Kidde & Co., Inc. For dye, rubber, and other supply packages, where a soft relaxed package is important, the control is as low as 1 gm. The yarn is drawn from the supply by

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Reader Service (Continued)

the control and fed to the package. **(F-16)**

Differential indicators in the textile industry are the subject of a bulletin from S. A. Hasler. The instruments are used for the continuous measurement of the difference between two speeds. They are used to supervise shrinking, sizing, mercerizing, and stretching machines. **(F-17)**

Separator shields, saddles, and nebs are described in a leaflet from Whitehead Engineering Co. The shields are of aluminum alloy and reduce the weight on each frame by 250 lbs. The shields are mounted on the ring rail, and they can be flipped back for doffing. **(F-18)**

Power equipment for industrial sewing machines is described in a catalog from the American Safety Table Co. Group-drive tables, collar machines, cuff and flap machines, and looping and seaming tables are described. The advantages of a conveyor ironer that folds, conveys, presses, and packages are shown. **(F-19)**

Roving stop motions are described in a bulletin from Adams, Inc. The stop motion is electrically operated, and it detects ends down immediately. Ends down in spinning have been cut 30%, and work assignments have been increased to six frames per operator. **(F-20)**

SUPPLIES

Spindles, bobbins, and rings are described in a bulletin from Draper Corp. The antifriction spindles allow heavier packages to be spun. The wood or plastic bobbins are made for every weave. The curved-web spinning rings allow heavier travelers to run without back tracking. **(F-21)**

"Stop Machine Vibration" is the title of a leaflet from Bakelite Co. The pad, to stop vibration, is made from layers of granulated cork and sisal fiber impregnated with vinyl resins. The pad will support pressures up to 4,000 psi. and resist water, oil, and most chemicals. **(F-22)**

Trucks, trays, and boxes are shown in a catalog from Kennett Equipment & Machinery Co. Stainless-steel perforated trucks for the dyehouse, stainless-steel conditioning trucks, pin trucks, and a steel truck that can be knocked down are shown. **(F-23)**

Ball-bearing top rolls for roving and spinning are described in a bulletin from Faultless Caster Corp. Neoprene compression washers maintain constant adjustment. The shaft extends the entire length of the roll. **(F-24)**

Top-weighting rolls are described in a brochure from SKF Industries, Inc. The rolls require lubrication once every 20,000 working hours. No dirt can enter the bearings when cots are ground. **(F-25)**

Spinning and twister bobbins are the subject of a bulletin from American Paper Tube Co. The bobbins are made from specially constructed papers that are laminated for strength. The carriers are impregnated and baked to hold nylon yarns. **(F-26)**

Bobbins are described in a brochure from Spaulding Fibre Co., Inc. The bobbins are made from laminated phenolic material in combination with aluminum tubing. No screws are used, and the aluminum tube is snag free. **(F-27)**

Igepals and their applications are described in a manual from Antara Chemicals. The booklet describes the general and specific properties and uses of eight Igepal compounds. **(F-28)**

Fiberglas box trucks are described in a leaflet from Beetle Boat Co. The trucks are one-piece molded construction and have a smooth white inside finish with

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The widening uses and demands for cotton over past decades has created a number of new problems in production and finishing. M. W. Jenkins' Sons has designed and developed a special line of brushes to solve these problems. The results of this experience, research and development, in cooperation with leading textile mills and machinery manufacturers are available today in the highly efficient patented Jenkins' METLKOR brush.

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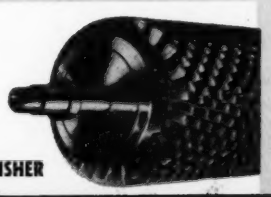

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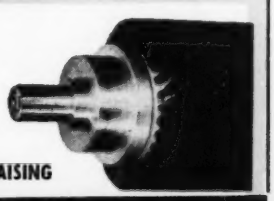

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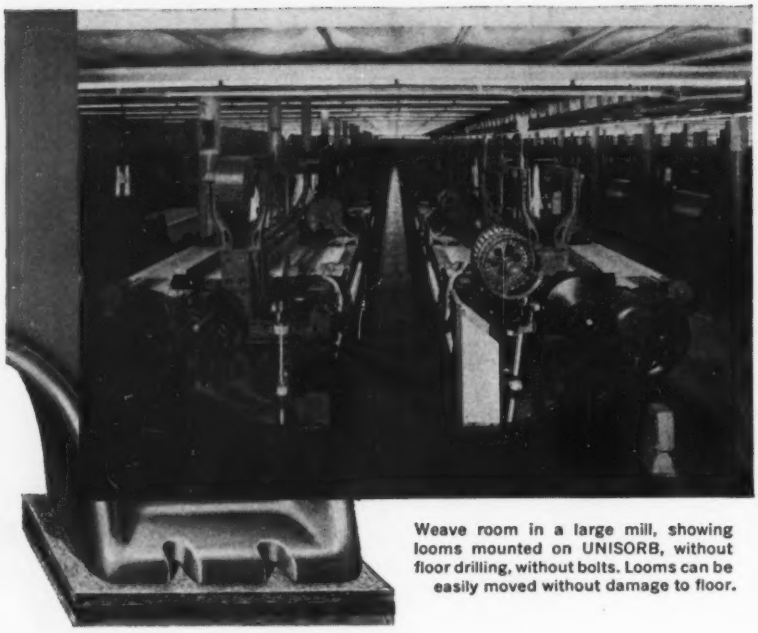

Weave room in a large mill, showing looms mounted on UNISORB, without floor drilling, without bolts. Looms can be easily moved without damage to floor.

Another Textile Mill Mounts Looms on

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You can now get these advantages by mounting all kinds of textile machines on UNISORB pads:

- 10% to 20% saving of installation labor
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- reduce vibration 60% to 85%
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- improve mill working conditions

For the facts about these advantages, including increased efficiency of machines and workers, return the coupon for your copy of the UNISORB Textile Machinery Booklet. It's free, and you're under no obligation.

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Reader Service (Continued)

rounded corners. The trucks are moistureproof and impervious to oil, grease, and most chemicals. **(F-29)**

Colored acetate yarns are shown in a folder from E. I. du Pont de Nemours & Co., Inc. The colors include black, scarlet, gold, navy blue, Irish green, coral, maroon, copper, oriental blue, and chartreuse. **(F-30)**

MAINTENANCE & ENGINEERING

An acoustical system is described in a bulletin from Reynolds Metals Co. The system consists of corrugated and perforated aluminum panels above which are placed sound-absorbing blankets. **(F-31)**

An air-check valve that replaces stop and safety valves is described in a bulletin from Pennsylvania Pump & Compressor Co. The valve employs ring-plate-design valves arranged in a housing to automatically prevent reverse flow. **(F-32)**

Oil-Mist lubrication is discussed in a catalog from Stewart-Warner Corp. The system distributes atomized oil through tubing to all types of lubricated mechanisms, such as antifriction and plain bearings, gears, slides, cams, chains, and rollers. **(F-33)**

A steam cleaner is described in a brochure from Turbo Machine Co. A portable unit houses an oil heater to supply steam pressures from 80 to 125 psi. in 45 secs. Applications of the cleaner include cleaning and degreasing textile machinery, conveyors, floors, windows, and walls. **(F-34)**

Trucks and racks for handling heavy rolls of textile materials are described in a bulletin from Floor Covering Equipment Co. Trucks are completely assembled. The balance of the rack is shipped knocked down and can be assembled in one hour. **(F-35)**

Air conditioning, with multiple units, is the subject of a brochure from Kritzer Products. The units are mounted in building roofs and eliminate pipes and ductwork. The units can be centered in hot spots and hot-process areas. Dust and oil vapors are removed by the units. **(F-36)**

Steam generators are the subject of a bulletin from Union Iron Works. The boiler capacities range from 10,000 to 40,000 lbs. of steam per hour at pressures of 250 psi. Superheaters of the pendant or drainable type, with or without control, can be installed to meet requirements. **(F-37)**

Stainless-steel pipes are listed in a catalog from A. B. Murray Co., Inc. Boiler and pressure tubes, hydraulic tubing, seamless and welded pipe, seamless mechanical tubing, and fittings are described. **(F-38)**

Casters and wheels are described in a bulletin from The Fairbanks Co. The 4-in. casters with the pressed-steel wheel are made especially for the textile industry. The caster has a tight-fitting thread guard, and the thread will not chip or wear to a sharp edge. **(F-39)**

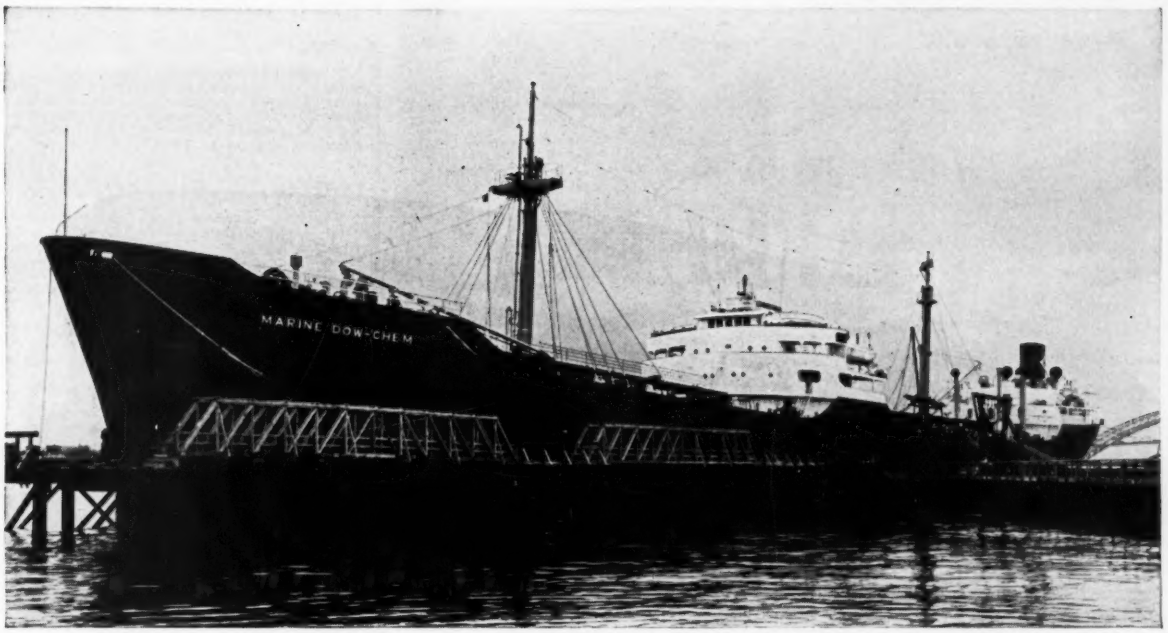
Industrial plastics are described in a bulletin from Joseph T. Ryerson & Son, Inc. The average characteristics and properties of sheets, rods, special shapes, and tubes are listed. **(F-40)**

Industrial electronic counters are described in a leaflet from Post Machinery Co. A one-tube unit counts up to 20 pieces per second, and a three-tube unit counts up to 2,000 pieces per second. **(F-41)**

Glass pipe and fittings are described in a folder from Sentinel Glass Co. The borosilicate glass has a low coefficient of expansion; it can stand thermal shocks; and it is corrosion resistant to most chemicals. The pipes are used in process piping, sampling lines, and instruments. **(F-42)**

Plastic pumps are described in a bulletin from Vanton Pump & Equipment

DOW



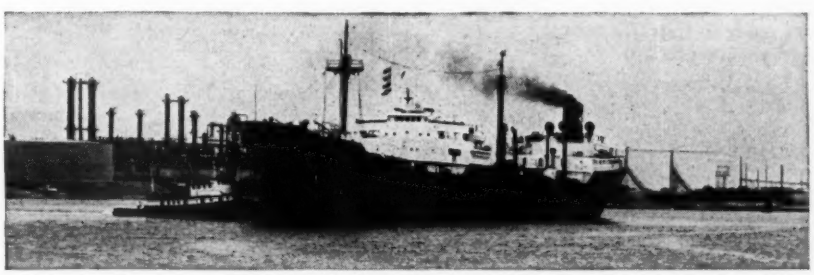
S. S. Marine Dow-Chem on first arrival at expansive Bayonne Terminal.

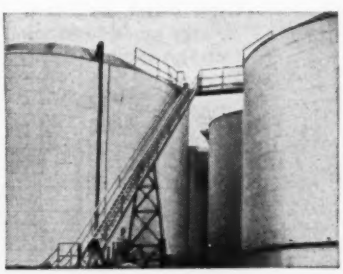
New Dow Ship and New Dow Terminals
speed volume delivery of 73% caustic soda to users

The Dow Chemical Company now has extensive new caustic soda solution distribution facilities in operation. The *S. S. Marine Dow-Chem*, first tanker ever designed and built exclusively for the sea transportation of liquid chemicals, currently delivers 73% caustic soda in volume quantity to two new Atlantic seaboard bulk terminals, located at North Charleston, S. C. and Bayonne, N. J. Both this thoroughly modern 18,000-ton chemicals carrier and all terminal facilities for cargo unloading, storage and transshipment safeguard the uniform high purity of Dow's 73% caustic solution.

One hundred thousand pounds of commercially pure nickel were used in construction of the *Marine Dow-Chem's* caustic cargo tanks, pumpline and heating coils. Terminal storage tanks are fully nickel-clad, all loading and unloading pumps and lines are pure nickel. Nickel steam heaters keep 73% solution at the exact temperature desired.

This important distribution expansion means that Dow customers are assured even faster delivery—*another* good reason for placing that caustic order with Dow. THE DOW CHEMICAL COMPANY, Midland, Michigan.

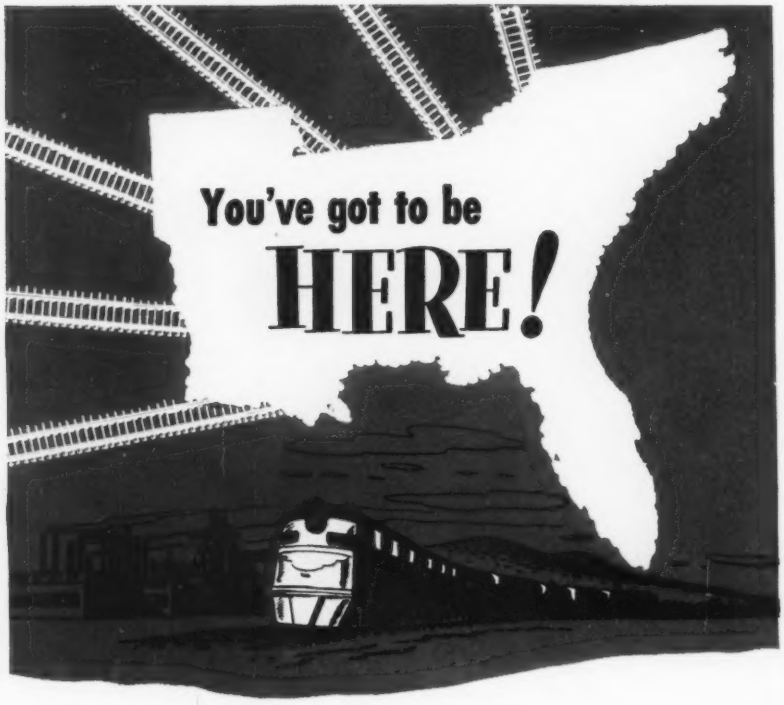




New flagship of extensive Dow waterways fleet begins maiden voyage from Freeport . . . new nickel-lined tanks at Bayonne protect 73% caustic purity during storage.

you can depend on DOW CHEMICALS

DOW



...for Lower Distributing Costs

Another top reason why industry is headed Southeast: The area's vast network of through and connecting railroads that cut distributing costs by fast, dependable hauling of raw materials and finished products. Twelve major railroads, many completely dieselized, and thousands of miles of new highways link resources with markets in this ever expanding consumer-industrial gold mine of 28 million people.

READY-MADE RESOURCES FOR PROFIT!

Here's every natural and man-made resource you need to operate successfully in the Southeast: low-cost utilities; ample water; raw materials; plentiful, intelligent and willing labor; mild climate; cooperative local governments. *And* a bank that will help you find a suitable location, help *finance your relocation* . . . THE FIRST NATIONAL BANK OF ATLANTA . . . a bank that can handle *your* requirements.

Experienced Industrial Location Specialists are available to do your spadework. They are ready to start this minute to help you find the best location for *your* operation.

THE FIRST NATIONAL BANK OF ATLANTA

Write today. All inquiries held in strictest confidence. *Address Business Development Department, The First National Bank of Atlanta, Atlanta, Georgia.*

. . . In Business for Your Business

(Capital Funds in excess of $22,000,000)

Reader Service (Continued)

Corp. The pumps have no stuffing box, shaft seals, gaskets, or internal valves. They are designed to handle highly corrosive fluids and abrasive slurries. **(F-43)**

Smoke stacks, water tanks, and processing equipment are described in a bulletin from J. J. Finnigan Co. Various installations of pressure vessels, breeching, and plate work in the Southern states are shown. **(F-44)**

GENERAL

Stapling machines for handling cartons from 10 to 37 ins. wide and up to 100 ins. long are explained in a bulletin from International Staple & Machine Co. The machines handle simultaneous closing of both ends of full, overlap, or telescope cartons. **(F-45)**

"How Dynamic Is Your Company?" is the title of a newsletter from George H. Elliot & Co. Financial analysis, orderly attacks on costs, stepping up sales effectiveness, and organizational analysis are discussed. **(F-46)**

Three-dimensional binocular magnifiers are described in a pamphlet from Edroy Products Co. Straightening knitting needles is one of the textile uses for the device, which reduces eye strain and squinting. **(F-47)**

Dynel in rayon blends is the subject of a booklet from Carbide & Carbon Chemicals Co. New textures, longer wear, lasting press, greater strength, and pleat and crease retention to rayon blends are emphasized. **(F-48)**

Multicolored metallic yarns are shown on cards from Metlon Corp. One end of Metlon yarn is combined with other fibers. Iridescent effects are obtained by using two-colored yarns of primary colors. **(F-49)**

Extension lamps with a long arm are described in a leaflet from Luxo Lamp Corp. An extra arm has a total radius of 60 ins. and is useful where the light must be moved to different spots over a wide area. **(F-50)**

Sample Acceptance

CONTINUED FROM PAGE 95

(3) k_u = number of standard deviations for u, the unacceptable quality level
In the example, $u = 10\%$
Hence, $k_u = 1.28$

(4) k_a = number of standard deviations for a, the acceptable-quality level
In the example, $a = 1\%$
Hence, $k_a = 2.33$

Sample Size

The sample size is dependent upon the same element used for the reject limit factor. The formula:

$$N = \frac{2\,(k_p + k_c)^2 + (k_p k_u + k_c k_a)^2}{2\,(k_u - k_a)^2}$$

Theoretical considerations not given in the above formulas were used to calculate the values listed in Table I, since a complicated distribution is involved. Consequently, solution of these equations will not give exact agreement with Table I. The discussion by Wallis contains a more extensive listing of plans and explains the theoretical considerations that are beyond the scope of this article.

Values of k for specific percentage points that are of most common interest are shown in Table II.

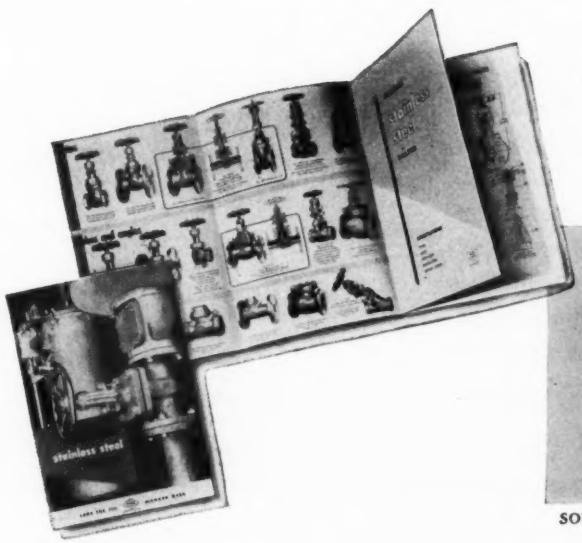
Trim costs with this hook-up for valve-killing corrosive services

Stainless Steel PLUS Jenkins Quality

To end high valve mortality from most corrosive liquids, and to control fluids that must be kept free from contamination or discoloration, stainless steel is the right metal. But it takes more than metal to make a valve. For dependable performance, you need the two-way hookup — Stainless Steel *and* Jenkins time-proved Valve Engineering.

With the increased demand for processing equipment that resists corrosion, more and more Stainless Steel Valves have been added to the Jenkins line. It now includes types, designs, sizes and alloys to meet practically all industrial needs.

Let the famous Diamond trade-mark be your guide when you choose valves of stainless steel. As on *any* Jenkins Valve, it means *extra value* . . . longer, trouble-free service life.



NEW BOOKLET describes the wide range of types, sizes, pressures, and alloys available in Jenkins Stainless Steel Valves, with diagrams and dimensions. Includes description of alloys, helpful information on selection, and survey forms. Ask for Form 200. Jenkins Bros., 100 Park Ave., New York 17.

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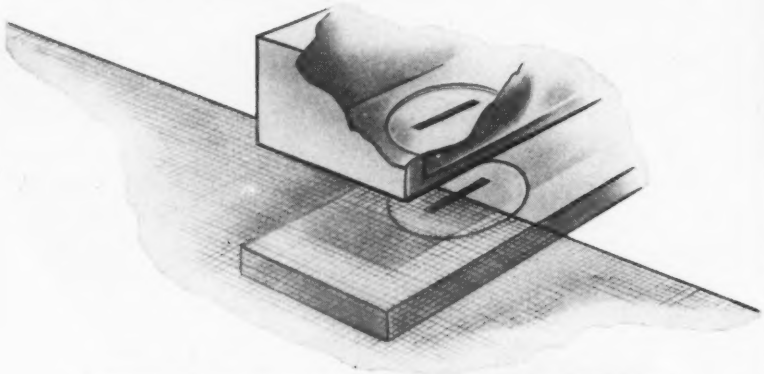
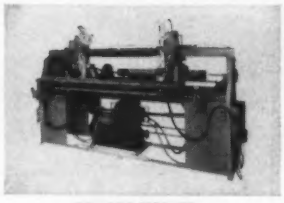
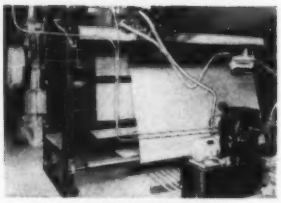
Nothing touches the cloth but a breath of air

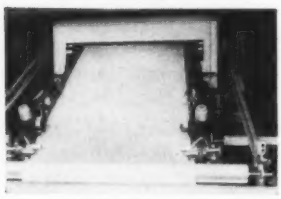




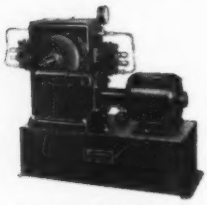
SELVAGE MARKER



PIN TYPE TENTER



CLIP TYPE TENTER



CLOTH GUIDE REGULATOR

The Askania Cloth Guide Control has been tested on hundreds of applications—it's extremely fast, accurate and dependable. It guides fast moving webs with a breath of air. It's an ideal unit to solve your cloth guiding problems on Tenter Frames, Tubing Machines, Folding Machines, Examining Machines, Printing Machines, Slitting Machines, Labeling Machines or Rewinding Machines. Askania Cloth Guide Controls are establishing new standards in the finishing departments of hundreds of Textile Mills. If you have a cloth guiding problem—ask for Bulletin A-161, or call Askania engineers for full details.

ASKANIA REGULATOR COMPANY
272 E. Ontario Street, Chicago, Illinois
Subsidiary of General Precision Equipment Corp.

TEXTILE *Equipment* NEWS

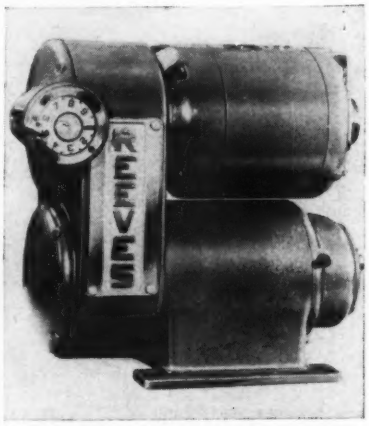
CONTINUED FROM PAGE 114

Shearing Machine Operates At up to 110 Yds. per Min.

SHEARING MACHINE is suitable for cotton, linen, jute, silk and synthetic-fiber cloth. Called the Super Duplo and made by Sam Vollenweider Ltd., Horgen, Switzerland, the machine has two cutters to keep grinding and power costs low. Cloth speed is anywhere from 0 to 110 yds. per min., controlled by a variable-speed hydraulic gear, which requires no spare parts and does not wear out. Production is up to 220,000 yds. for a 40-hr. period. Seams run through the shear cutters at top cloth speed; the knives are stopped instantly by an electronic decelerating motion. Other features are a dust-exhaust system, an air filter, a selvage-tensioning device, and cloth-spreading rolls. Standard sizes are for 47-, 63-, 78-, 94-, and 110-in. cloth.

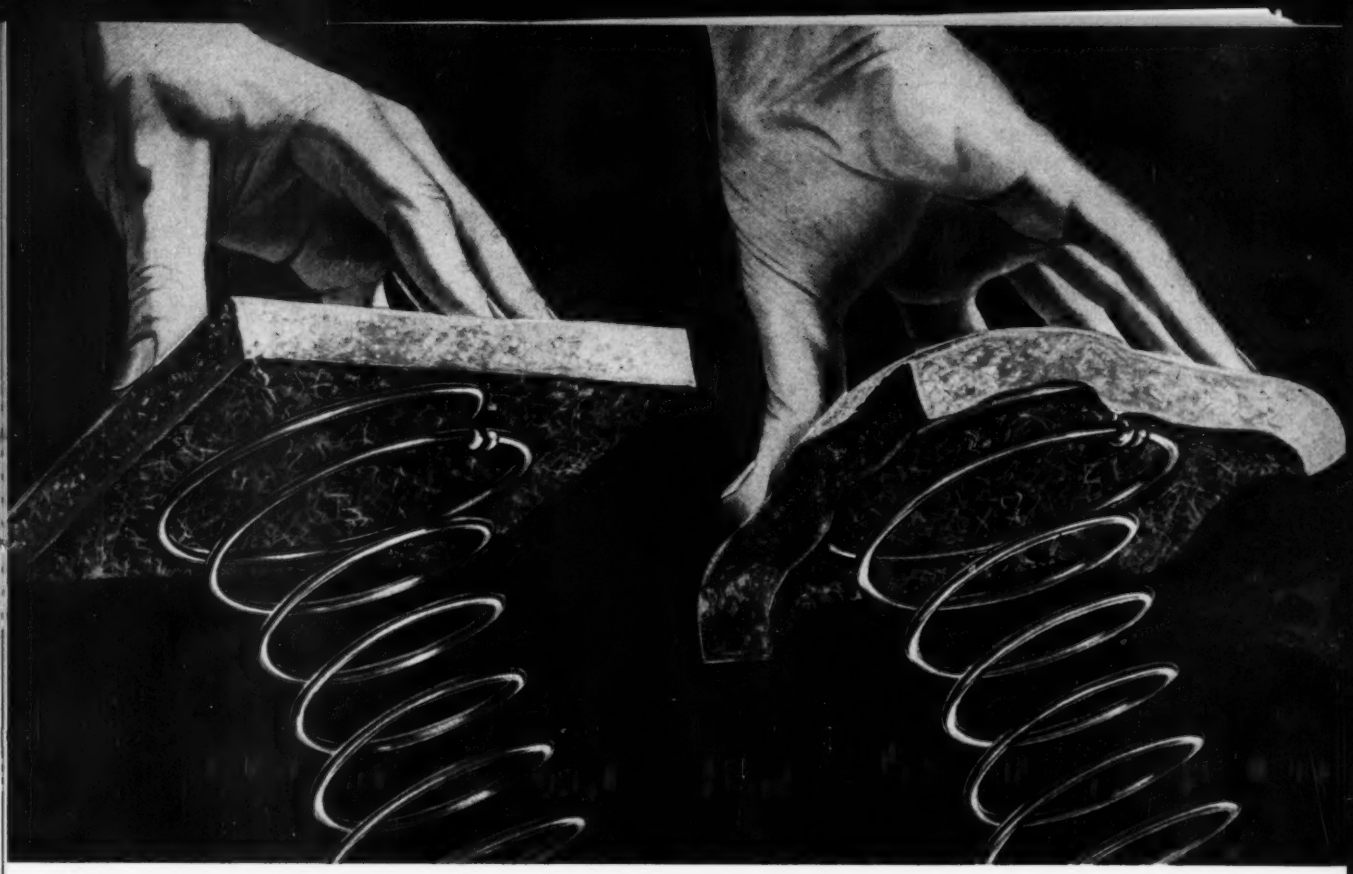
Circle T-28 on Reader-Service Card

Redesigned Drive



VARIABLE-SPEED DRIVE with fractional-horsepower ratings, ¼-, ⅓-, ½-, and ¾-hp. sizes in speed ranges from 2 to 1 to 10 to 1, has been redesigned by Reeves Pulley Co., Columbus, Ind. It is available in 112 different assemblies for various space requirements. Speeds from 3 to 4,660 rpm. are available. A new threaded-spiral-groove lubrication system is a feature. Besides the handwheel, remote and automatic controls are possible.

Circle T-29 on Reader-Service Card



Sisal fibers welded with rubber give springy feel—with no spring feel!

Naugatuck's latex has done it again—welded common sisal fibers together to produce a cushioning material and spring insulator that outwears ordinary upholstery insulators two to one!

These tough Si-Latex pads by Burton-Dixie retain their shape and resiliency indefinitely—won't shred, pull apart, or cup into spring coils under the hardest use.

A 60 lb. weight dropped 48,000 times on a Si-Latex pad caused no damage of any kind. Under the same test, an ordinary sisal pad shredded, pulled apart, and cupped deeply into the coils—became bumpy and practically useless!

Si-Latex has withstood ultra-violet rays at 180° F. for 180 hours without harm . . . 240 hours in an oxygen bomb (equal to twelve years of normal aging) with *no sign* of deterioration!

Tests show Si-Latex has half again the tensile strength of burlap—*more than 28 times the wear resistance!* What's more, Si-Latex pads are easily cut to size and shape—make installation easier, neater, and faster.

Easy to see what Naugatuck latex has done for Si-Latex—and why similar specially tailored latices are boosting the performance and saleability of products by the hundreds.

Why not see how Naugatuck latices for bonding, coating, dipping or saturating can help *you?* Write to the world's leader in fine latices at the address below.

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Division of United States Rubber Company

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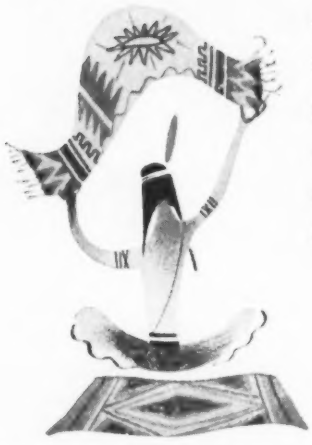
Anheuser-Busch, Inc., makes this service available because of its great interest in the future research and development of new corn derivatives for Industry, Medicine and the Home.



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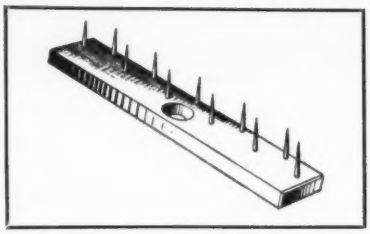
Gasoline Lift Truck Has Clutchless Drive

3,000-LB. LIFT TRUCK has a Mobil-Matic drive, an oil-immersed, multiple-disk clutch, constant-mesh transmission, and fluid coupling. Developed by Lamson Mobilift Corp., Portland, Ore., the truck is operated by a push-pull, forward-reverse lever, with two speeds forward and reverse. Power is supplied by a four-cylinder gasoline engine. Turning radius is 72 ins.

Circle T-30 on Reader-Service Card

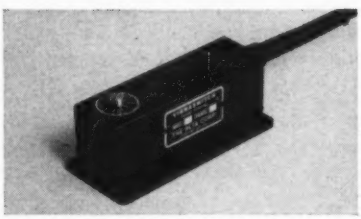
Teflon-Coated Tenter Plates



TENTER PLATES will be coated with Teflon in a new service to mills available from Southern Textile Works, P. O. Box 406, Anderson, S. C. The plates are produced for all makes of machines and are made from brass, with plain-steel, stainless-steel, or K-monel pins.

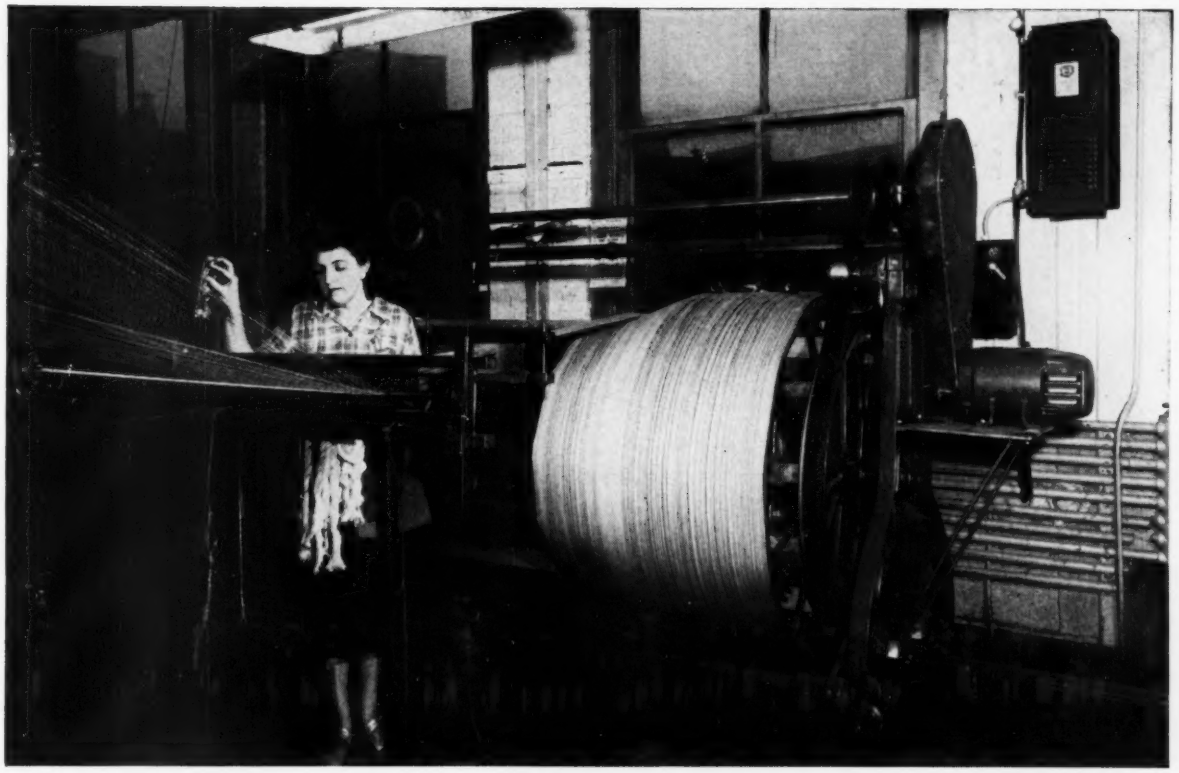
Circle T-31 on Reader-Service Card

Vibraswitch Used To Monitor Vibration



VIBRASWITCH is the name of this vibration-measuring and monitoring instrument. Made by The Beta Corp., P. O. Box 8625, Richmond 26, Va., the instrument can be used to actuate a warning or shut off a machine when the vibration exceeds the normal valve by a preadjusted amount. Flat response is from 0 to above 200 cps., with vibratory displacement increases of as low as 10 microinches at 12,000 rpm. Price: $88.50.

Circle T-32 on Reader-Service Card



ALL-ELECTRIC ADJUSTABLE-SPEED DRIVE

RELIANCE V★S DRIVE Jr.®

The all-electric, adjustable speed drive that eliminates mechanical gear boxes, clutches and variable pitch cone pulleys. Ratings from ¾ to 3 Hp.

provides velvet-smooth acceleration to protect yarn on worsted beamers

Costly down-time due to yarn breakage is kept at a minimum on textile machinery equipped with Reliance V★S Jr. Drive It permits application of power from zero to full running speed . . . evenly . . . smoothly . . . minimizing thread breakage.

The Reliance V★S Jr. Drive provides smooth, shockless operation, powerful starting, wide speed ranges, fast reversing and quick stopping. More and more manufacturers and users of machinery are finding these benefits the road to lower costs. May we send you all the facts? They're contained in our compact, fully illustrated Bulletin D-2102. Write for a copy today.

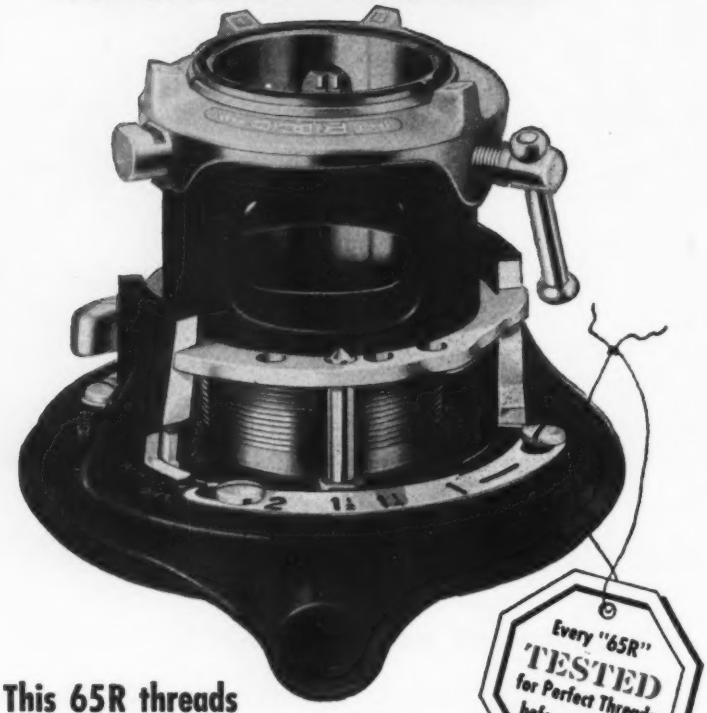
D-1479

RELIANCE ELECTRIC AND ENGINEERING CO.

Sales Representatives in Principal Cities • 1086 Ivanhoe Road, Cleveland 10, Ohio

For Trouble-Free Pipe Threading ...its a 65R

RIDGID



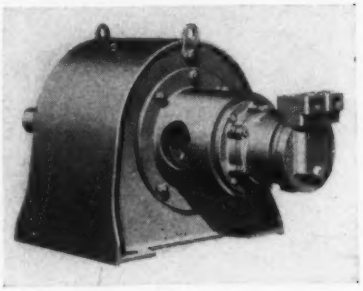
This 65R threads 1" to 2" pipe with 1 set of dies ...and it won't jam!

You won't find a die stock to equal this popular 65R—anywhere! It saves time—one set of self-contained high-speed dies adjust to 1", 1¼", 1½" or 2" pipe or conduit in 10 seconds! Mistake-proof self-centering workholder sets to size instantly! It saves trouble—lead screw won't jam, it kicks out automatically when standard length thread is cut. Clean perfect threads, *fast!* For trouble-free extra-easy pipe threading buy 65R at your Supply House.

THE RIDGE TOOL COMPANY • ELYRIA, OHIO, U. S. A.

RIDGID
Work-Saver Pipe Tools

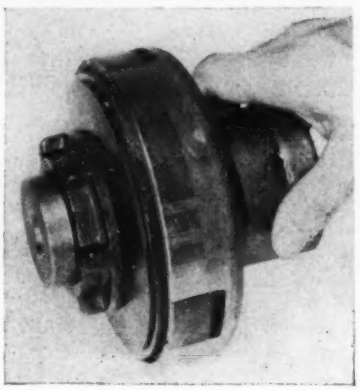
Hydraulic Output Units



PACKAGED HYDRAULIC OUTPUT DRIVE with a constant-displacement axial-piston motor and a Falk reducer is available from Oilgear Co., 1560 W. Pierce St., Milwaukee 4, Wis. Five sizes—1, 3, 8, 12, and 20 hp.—are available. Reducers provide output speeds from 1.7 to 1,170 rpm. Peak torques are 60% higher than normal. Applications include extractors, mixers, pumps, hoists, fans, and feeders.

Circle T-33 on Reader-Service Card

Adjustable Torque Limiter

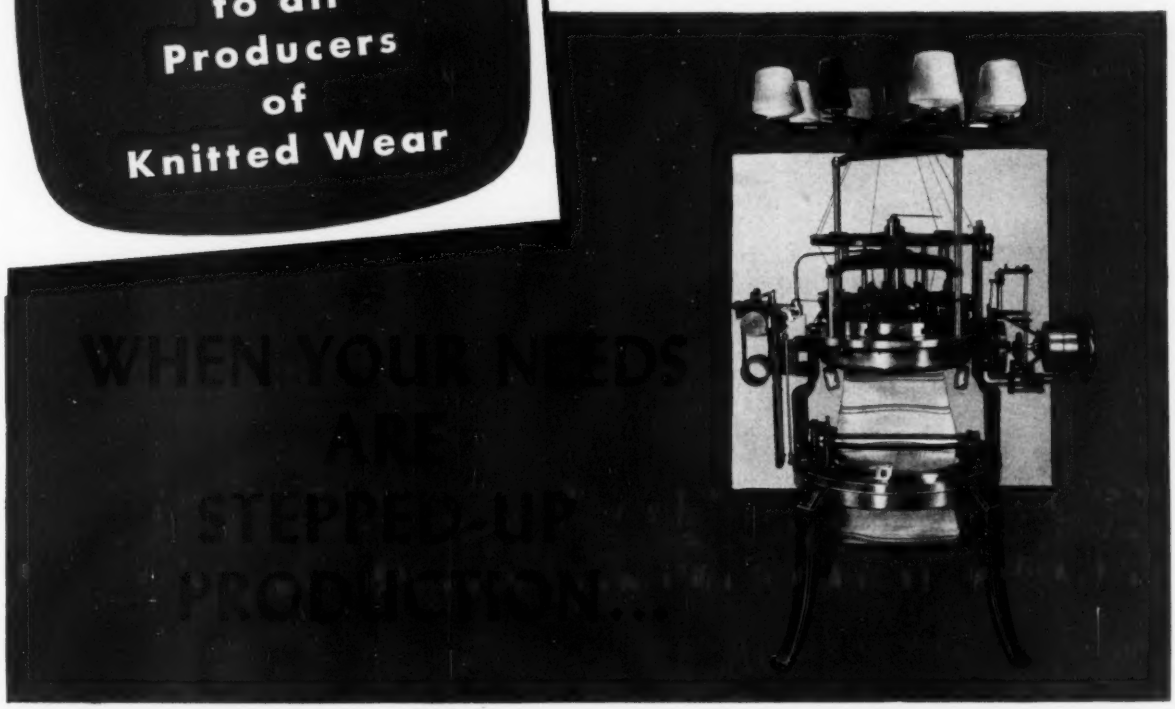


TORQUE-LIMITER coupling unit provides overload protection for machinery drives with directly connected shafts. Available from Morse Chain Co., 7601 Central Ave., Detroit 10, Mich., the unit combines the features of an adjustable slip-clutch overload device with those of a flexible coupling. The hub supporting the torque-limiter elements is keyed to the shaft. Maximum torque capacities are 130 ft.-lbs. and 260 ft.-lbs. Standard bore sizes are 1, 1⅛, 1¼, 1⅜, and 1½ ins.

Circle T-34 on Reader-Service Card

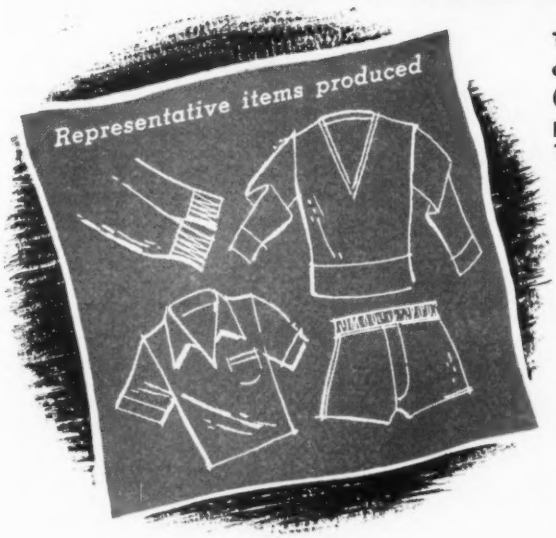
An Important Message to all Producers of Knitted Wear

New color television represents "Keeping in step with the times," as do these developments . . . .



THIS IS THE RIGHT MACHINE FOR YOU! . . .

The Wildman Rib Fabric Striping Machine



This machine is right for you because of the increased production it offers in the combinations of variety of stitches (one by one or two by two fabric) striped fabric of unlimited patterns, half cardigan, English or round welt, French or Tubular welt and clearing course or draw thread.

It's right for you because it operates as a single feed machine or in any combination of feeds producing fabrics for cuffs, collarettes, sweater bottoms, underwear, outerwear, sportswear and beachwear. Belt or individual motor drive.

Get complete information on its versatility, today — the WILDMAN Rib Fabric Striping Machine.

WILDMAN

MFG. CO., NORRISTOWN, PA.

MANUFACTURERS OF: FULL FASHIONED HOSIERY MACHINES; CIRCULAR MACHINES FOR OUTERWEAR, UNDERWEAR, SPORTSWEAR, TRIMMINGS; STOP MOTIONS

CUTTING COST

HIGH STACKING for down-to-earth savings!

Tremendous savings are being made by a well-known brewer with Towmotor Fork Lift Trucks. High stacking increased usable storage 32%, material flows faster to-and-from production, truck loading is 28 times faster, and the highway truck fleet was reduced 15%. Such savings are yours with Towmotor **Mass Handling*. Have a Towmotor *Mass Handling Engineer* analyze your material handling needs, or write for, "How To Catch Man-Hour Thieves." TOWMOTOR CORPORATION, Div. 2208, 1226 East 152nd Street, Cleveland 10, Ohio.

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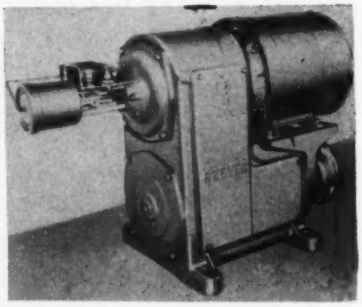
FORK LIFT TRUCKS and TRACTORS
SINCE 1919

IT'S HARD TO COMPETE WITH A **TOWMOTOR** *EQUIPPED PLANT!*

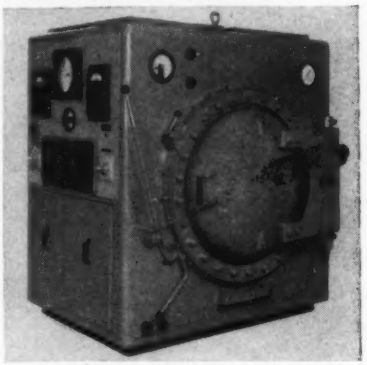
Pneumatic Motor Control Gives Linear Output Speed



AUTO-PNEUMATIC CONTROL for Reeves Vari-Speed Motodrives is available from Reeves Pulley Co., Columbus, Ind. The cam control on the pneumatic unit matches the natural curve characteristics of the Motodrive and automatically compensates for any variation from linear output speeds, compensating for changes in temperature, tension, flow, liquid level, velocity, etc.

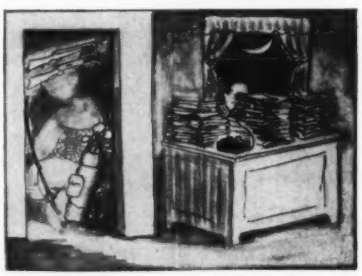
Circle T-35 on Reader-Service Card

New Door for Conditioning Machine



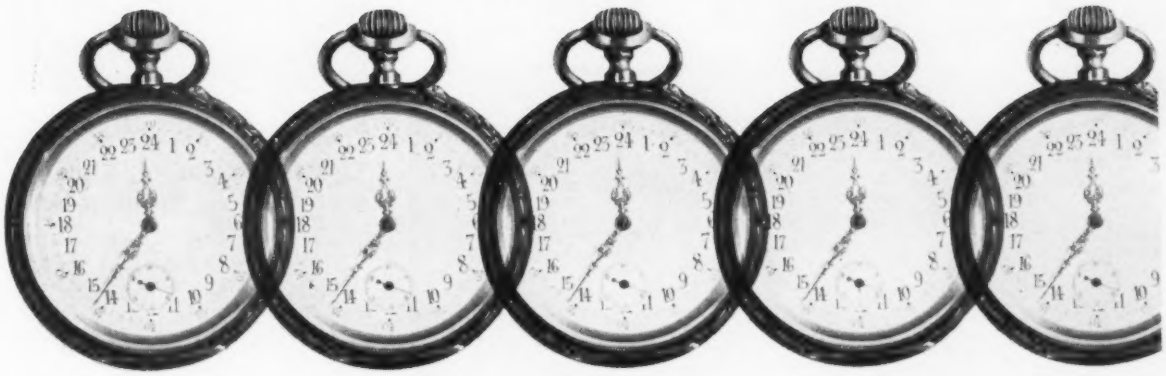
QUICKLOCK DOOR has been developed for the vacuum-and-pressure conditioning machine manufactured by Sanderson & Co. Ltd., 45 Barton Arcade, Manchester 3, England. One movement of the large hand lever locks the door. The machine cannot be started until all levers are in the closed position.

Circle T-36 on Reader-Service Card



"You know, Bill, at times I wish they had given this superintendent's job to somebody else."

You're Just Hours Away...



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36 STREAMLINED DISTRIBUTING STATIONS TO SERVE YOU...

to assure the fastest, smoothest service possible for its customers, General Chemical maintains one of the most efficient chains of warehouses and distributing stations in the country for acids, alums, phosphates and many other industrial chemicals. Presently, it has 36 streamlined distribution centers strategically located from coast to coast. Each is fully stocked with the chemicals required in the area it serves. Each is geared to supply your needs for any of the products listed below.

Why not check up on how the "G. C." distributing station in your territory can be put to work for you. For further information, just phone or write the nearest General Chemical office.

...WITH TEXTILE MAKING CHEMICALS

Glauber's Salt, Crystal & Anhydrous • Sulfuric Acid Acetic Acid • Aqua Ammonia • Hydrochloric Acid Tetrasodium Pyrophosphate, Anhydrous • Sodium Tripolyphosphate • Sodium Metasilicate • Sodium Sulfite, Anhydrous • Sodium Bisulfite, Anhydrous Oxalic Acid • Sodium Silicate • Aluminum Chloride, Solution

Basic Chemicals for American Industry

GC Allied Chemical

GENERAL CHEMICAL DIVISION

ALLIED CHEMICAL & DYE CORPORATION

40 Rector Street, New York 6, N. Y.

Offices: Albany • Atlanta • Baltimore • Birmingham • Boston • Bridgeport • Buffalo • Charlotte • Chicago Cleveland • Denver • Detroit • Greenville (Miss.) • Houston • Jacksonville • Kalamazoo • Los Angeles Minneapolis • New York • Philadelphia • Pittsburgh • Providence • San Francisco • Seattle • St. Louis Yakima (Wash.) • In Wisconsin: General Chemical Company, Inc., Milwaukee

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For more information, write direct or use Reader Service post card.

for *EXACT* regulation of TEMPERATURE AND HUMIDITY

in *ASPIRATING CABINETS*

High speed machinery, new materials and modern processing methods demand the most exacting control of temperature and humidity in production areas. To meet these rigid requirements, Johnson Automatic Temperature and Humidity Control apparatus is mounted in specially designed Johnson Aspirating Cabinets. These cabinets insure positive circulation of sampled air over the controllers while protecting the measuring and operating mechanisms from dust, lint and tampering.

Any desired combination of these features may be included in Johnson Aspirating Cabinets:

THERMOSTAT (Proportional Action) to operate Johnson Valves on heat sources with modulating action.

HUMIDOSTAT (Proportional Action) to control Johnson Valves on humidifying apparatus.

DOUBLE INLET BLOWER to insure accurate measurement of temperature and humidity in the treated area.

ELECTRIC SWITCH ASSEMBLY to provide a convenient connection for the blower motor.

TIMING PULSATOR to establish "off periods" during which the Humidostat cannot operate . . . prevents over humidification.

ADJUSTABLE CUMULATOR to permit re-adjustment of the action of the Humidostat.

AIR FILTER to remove particles from the air.

OTHER ACCESSORIES AVAILABLE: Weekend Control Selection, Recorder Stations, Recorder-Controllers, Humidifiers (Evaporating Pans, Spray Systems, Atomizing Systems, Perforated Pipes), Bull's Eye Indicators, Humidity Alarms, Switch-over Stations.

Whether your problem involves a new or existing mill, a single small area or complete plant coverage, an experienced engineer from a nearby Johnson branch office will gladly explain the advantages of Johnson Automatic Temperature and Humidity Control. There is no obligation. For more complete details about Johnson Aspirating Cabinets, write for Bulletin H-400. JOHNSON SERVICE COMPANY, Milwaukee 2, Wisconsin. Direct Branch Offices in Principal Cities.

JOHNSON *Automatic Temperature and Air Conditioning* **CONTROL**

MANUFACTURE • APPLICATION • INSTALLATION • SINCE 1885

Mill Maintenance

Tips for Caulking, Glazing, And Painting Window Sash

Sash is the most expensive part of a building; for instance, it's twice as costly per square foot as a concrete floor.

Sash-maintenance measures are concerned essentially with three things:

1. Caulking (sealing the opening between the window frame and the wall)
2. Glazing (sealing and cushioning the glass)
3. Painting (to protect metal surfaces against rust, and wood surfaces against rot)

Use a Mastic Compound

When wood, steel or aluminum windows are set into a masonry wall, a crack is left between the window frame and the wall. This crack must be filled. Since masonry and wood or metal do not expand and contract at the same rate, the joints must be filled with a flexible mastic compound. The compound must adhere to the sides of the window and the masonry wall and must expand and contract with temperature changes.

If putty has been used in the original installation, glazing failures are inevitable. To maintain a seal between the glass and sash requires both elasticity and adhesion. Putty is not elastic; it sets hard. The adhesiveness of putty is erratic; it may fall out of the rabbet, or it may require a hammer and chisel to break it loose.

When putty fails to adhere, it provides no seal; water can enter the resulting crack. If putty adheres strongly, its adhesion is of little value without elasticity because something will have to let go under expansion and contraction strains. Either the putty will crack or the glass will break.

Prevent Rust and Rot

Steel sash rusts. Expansion of the rust forces the glazing bead loose. Wood sash rots, and the swelling of the wood also forces the glazing bead loose. Water deteriorates the bead itself when it is not weatherproof. In cold weather, the moisture that

NOW BOGER and CRAWFORD OFFERS

PLUS 4

HIGH TEMPERATURE DYED YARNS

1. FASTER COLORS
2. MORE COLORS
3. TESTED COLORS
4. FOR ALL TYPES OF YARNS

ORLON . . . NYLON . . . COTTON . . . MERCERIZED . . . YARNS are now dyed by BOGER & CRAWFORD with their new PLUS-4 HIGH TEMPERATURE method! Advantages are many! Faster Colors! A greater range of colors! Tested Colors! For all types of yarns!

Counts: 30/2 to 120/2 inclusive C. P. mercerized as well as 30/1 to 70/1 inclusive Combed Peeler as well as 60/1 to 80/1 and 60/2 to 80/2 spun nylon . . . color fastness equal to or better than Synthetic Fiber Test #1 and #2 AATCC.

Boger & Crawford is also "tops" in bleaching . . . its bleached yarn is *permanent* white, widely used for knitting.

FREE SAMPLES SENT UPON REQUEST. WRITE US TODAY. You will quickly see the advantages of PLUS-4 High Temperature Dyed Yarns.

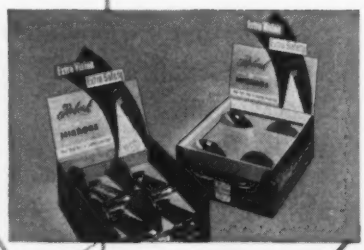
GUARANTEE
The Quality of Boger & Crawford Yarn is guaranteed — the highest tribute we can pay it!
Signed
Frederick Boger

BOGER and CRAWFORD

"K" and E. VENANGO STS., PHILADELPHIA 34, PA., U.S.A.
SPINNING PLANT— BOGER CITY, N. C.

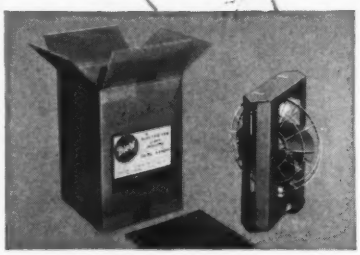
For more information, write direct or use Reader Service post card.

save packing
TIME



utilize
SPACE

eliminate damaging
MOTION



HINDE & DAUCH

Authority on Packaging

12 FACTORIES • 40 SALES OFFICES

Write for booklet, "How to Ship More Economically in Corrugated Boxes." Hinde & Dauch, Sandusky 19, Ohio.

gets under the bead freezes; and the resulting force spalls the bead loose.

Mastic glazing compound provides a perfect watertight, long-lasting seal between glass and sash, prevents rotting of wood sash, and protects steel sash from corrosion by rust. It cushions glass against vibration and seasonal expansion and contraction. Consequently, it reduces and virtually eliminates glass breakage from these causes.

Paint to Protect

Painting is an obvious part of sash maintenance. It protects metal sash against rust and protects wood sash against rotting. Paint does not have to be applied over a good colored mastic glazing compound if the compound is selected with the color incorporated in the compound.

Paint should be applied on steel or wood windows where protection is needed before the mastic is applied. Painting window sashes before glazing prevents "cutting in" around lights of glass. As a result, time and labor are reduced and the paint job costs less. *Tremco Mfg. Co.*

Slasher Performance

CONTINUED FROM PAGE 65

by its respective frequency, and the square of the average is subtracted. Once the variance is calculated, the coefficient of variation is merely the square root of the variance (called the standard deviation) divided by the average.

How We Use the Reports

In this quality-control report, the histograms give a good picture of the type of variation; and the coefficients of variation give a direct measure of how the strength variation of this set compares with previous sets of this same style (and other styles). It is also easy to see if the variation in the sized yarn is considerably greater than that of the unsized yarn—an indication of uneven slashing.

On the report itself, two other important figures are obtained. One is the percent increase in strength due to sizing. This figure is obtained by getting the difference between the average sized and unsized strengths and dividing by the unsized strength. This result, too, can be compared with previous results to measure the over-all effectiveness of the slashing.

Finally, the average percent stretch is obtained. This percent is not for the stretch at the break but the stretch at a specific load (different for each style). This load is usually

YARN DYED FABRICS —

the Royalty of Textiles

French Ribbon Plaid, 1890
Museum of Art, R. I. School of Design.

ONE element that won for the Gay Nineties their sobriquet was exuberance of design — as illustrated by the yarn dyed fabric shown here. Unfortunately, only the most prosperous could then afford "the royalty of textiles".

Soon, however, low-cost mass production was to bring fine yarn dyed fabrics within reach of all. Franklin Process, the original American package dyeing method, has figured largely in this modern advance.

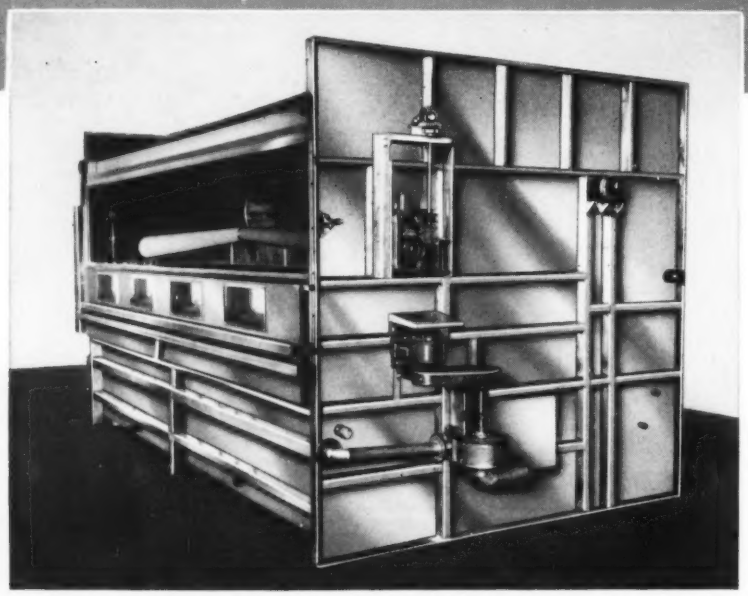
Whatever your purpose, we can supply you with the best colored yarns at competitive prices. Nearby, there's one of our five strategically-located plants — offering our services as yarn merchants, and the world's largest package yarn dyers. Ask for prices and delivery!

Franklin Process

COTTON YARN MERCHANTS & LARGEST PACKAGE DYERS IN THE WORLD
New York Representatives — 40 Worth Street
PROVIDENCE • PHILADELPHIA • GREENVILLE • CHATTANOOGA • FINGERVILLE, S. C.

The Fleet Line
RUG DYE KETTLE

With Successful New Features For LEVEL DYEING · EVEN TEMPERATURE FULL CIRCULATION OF LIQUOR



R&L Stainless Steel Rug Dye Kettle design solves problems of level dyeing which usually arise from position of rug in the kettle. Two strong impellor pumps induce positive liquor flow, steam and liquor are introduced at *front* of machine. Write for complete data.

FUNCTIONS — Dyes cotton or synthetic rugs in open width, also does rope dyeing.

FEATURES —

Stainless steel throughout, completely self-supporting construction.

Positive liquor flow controlled by pumps maintains even temperature and circulation throughout bath.

Cloth guiders, electronically controlled, automatically center cloth within very narrow limits of traverse movement.

Guiders are rubber covered, may be had in stainless steel.

Three different drive speeds give dyer ample choice for meeting varied conditions and for application of his own dyeing technique.

Steam and liquor introduced at *front* of machine through dispersants running full length of kettle.

Dye dispensers, salt dispensers.

Counterbalanced door easily raises and lowers from any position.

Automatic exhaustion when door is opened.

Interior lighted for easy supervision.

Made in widths to accommodate any size rugs.

ADVANTAGES —

More level dyeing
Positive and assured results
Dyes rugs open widths
Lower labor costs
Faster dyeing cycle
Lower dyeing costs
Dyes in rope form
Easier maintenance

RIGGS AND LOMBARD INC.

FOOT OF SUFFOLK STREET, LOWELL, MASS.

Agents: Paul A. Merriam Co., 1491 Broad St., Providence, R. I. • Albert R. Breen, 80 E. Jackson Blvd., Chicago 4, Ill.
F. W. Warrington Co., 611 Johnston Bldg., Charlotte, N. C. • A. Harold Zayotti, Jr., P. O. Box 125, Riverton, N. J.
H. A. Mott Co. Limited, Brantford, Ontario, Canada

a little over half the average breaking strength. On the report illustrated here, the load was 150 gms. From the IP-2 chart, the average stretch for each group of four tests is obtained visually; and these groups are averaged to get the desired percent stretch. Here again, the stretch can be compared with previous reports as a measure of the residual elasticity in the ends before and after slashing.

How One Mystery Was Solved

Fig. 3 illustrates how this procedure can be used to rapidly detect certain situations. These histograms were obtained in the same manner as described above, but there are two distinct peaks in the sized and unsized yarn strengths. In tracing back, we found that part of the set was old yarn that had a lower breaking strength than the new yarn. The proportion of the weaker yarn is less than that of the stronger yarn; so the histograms actually consist of two distributions superimposed on each other with the smaller one the weaker in both cases. Without this technique, such a situation might have gone undetected.

Size Content Is Checked

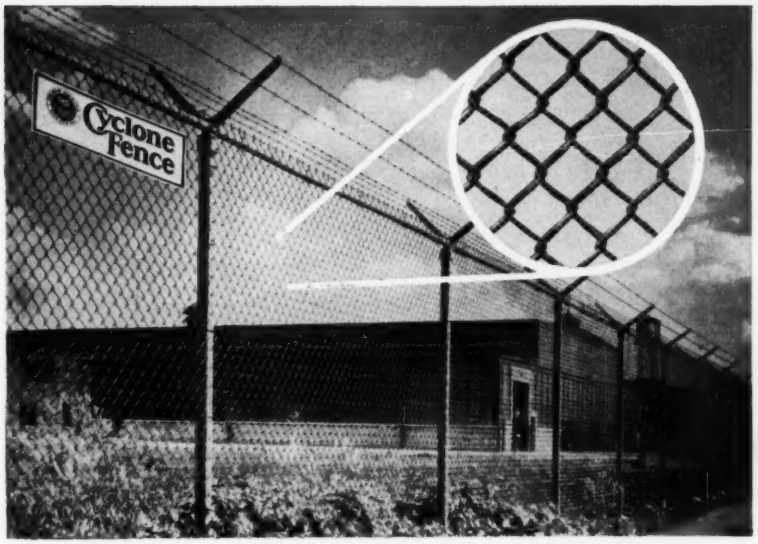
In addition to single-strand tests, the laboratory gets size content as a check on the quick method.

Two 5- to 10-gm. samples of sized yarn are bone dried, weighed on an analytical balance, boiled in water, heated in a desizing solution, reboiled, bone dried a second time, and weighed again.

The actual percent of soluble matter is merely the loss of weight divided by the bone-dried weight. But from occasional similar evaluations of the unsized yarn, we've found that this procedure will normally remove 3% of the weight of cotton (mostly in the form of natural waxes). So this normal boil-off figure of 3% is subtracted from the percent of soluble matter to get the actual size content. The results from the two separate desizing tests are used as a check on each other and are averaged.

Since we already know what the slasher department has calculated by the quick method on the same sample, that figure is compared with the laboratory figure on the quality-control report. The comparison acts as a check on the more rapid slasher-room procedure.

These simple laboratory tests show us strength and strength variation before and after slashing, stretch before and after slashing, and size content. The report that summarizes these tests has become another valuable quality-control tool at Wamsutta.



Enclose your plant with

CYCLONE FENCE...

the "weave of protection"

• USS Cyclone Chain Link Fence has justly earned its reputation as the world's most widely used property protection fence. Wherever it has been installed—at all kinds of manufacturing plants, under all conditions of climate and terrain—Cyclone Fence has proved its ability to protect valuable property and equipment . . . to keep out casual trespassers and vagrants . . . and to discourage thieves and vandals. Cyclone woven Chain Link Fence is really the "weave that protects."

And Cyclone Fence is an attractive as well as invaluable part of every textile mill. The plain, simple design of the strong, sturdy woven Chain Link fabric adds to the neat appearance of the plant.

You can buy cheaper fence than Cyclone, but it will cost you more per year. Cyclone gives full value for your dollar. Nothing but brand-new, top-quality material is used throughout. Post and top rails are heavy and rigid, so they'll never buckle or sag. Gates won't drag. The chain link fabric is woven from heavy steel wire and galvanized *after* weaving for greatest resistance to rust and corrosion. And Cyclone is erected by full-time, Cyclone-trained experts—so that your fence will stay trim and good-looking for years.

NO JOB IS TOO LARGE—NO JOB IS TOO SMALL FOR CYCLONE*

CYCLONE FENCE DEPARTMENT, AMERICAN STEEL & WIRE DIVISION
UNITED STATES STEEL CORPORATION

WAUKEGAN, ILLINOIS · SALES OFFICES COAST TO COAST · UNITED STATES STEEL EXPORT COMPANY, NEW YORK

Cyclone Fence, Dept. W-84, Waukegan, Ill.

Please send me without obligation, complete information on Cyclone Fence and Gates.

Name .....

Address .....

City ..... State .....

USS

*Cyclone is the trade-mark name of fence made only by Cyclone. Accept no substitute.

USS CYCLONE FENCE

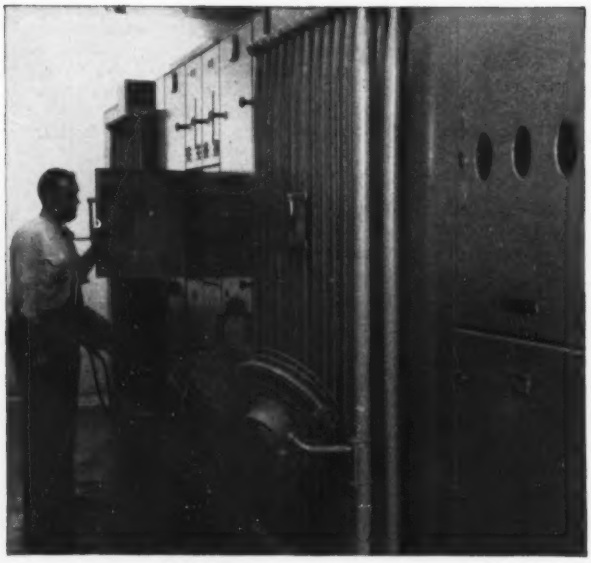
UNITED STATES STEEL

For more information, write direct or use Reader Service post card.

ENGINEERING REPORTS:

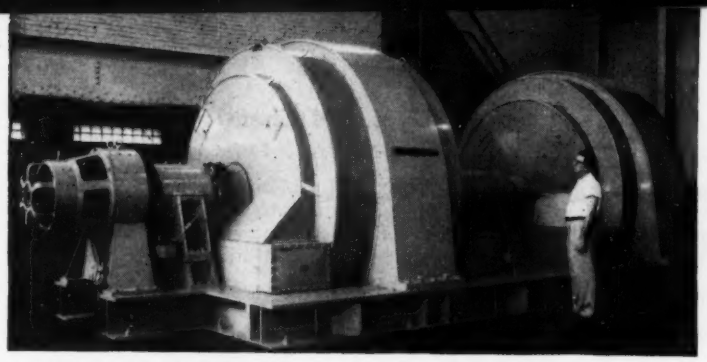
ECONOMICAL, DEPENDABLE POWER GENERATION is supplied at Dan River Mills' Schoolfield mill in part by this new G-E 7500-kva turbine-generator. Incoming steam enters at 600 lb pressure, exhausts at 100 lb for process use in dyeing ranges and tenter dryers. In addition, this modern textile mill also purchases utility power.

$7-million addition at Dan River powered by flexible General

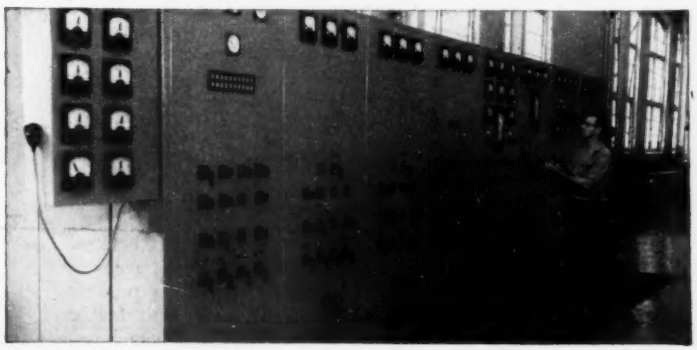


POWER FOR FINISHING and bleaching is provided by compact G-E load-center unit substation, rated 1000 kva, 6900/600 volts, 60 cycles. Factory-wired, it saves installation costs.

POWER FOR FILTER PLANT, at suitable voltage level, is supplied by these two G-E 1000-kva power transformers, which step down voltage of power purchased by Dan River Mills.



POWER-SYSTEM FLEXIBILITY is made possible by this G-E 5000-kva frequency changer installed previously. It can convert purchased 60-cycle current to 25 cycles, or plant-generated 25-cycle current to 60 cycles.



POWER-SYSTEM CONTROL is function of main G-E switchgear panel, through which all power is distributed. Plant generates 10,000 kw of 25-cycle current, purchases about 100,000,000 kwh of 60-cycle current per year.

Mills Electric system

A new $7,000,000 addition to the finishing mill providing a total finishing capacity of 1,000,000 yards per day was recently added by Dan River Mills to its Schoolfield Division in Danville, Virginia.

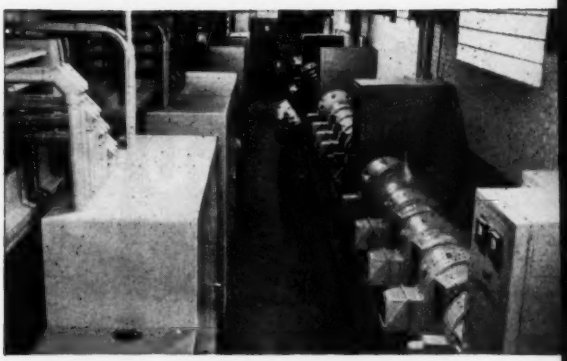
Because this increased load required an expanded electrical system, General Electric application engineers were called in to work with the plant's designers, United Engineers and Constructors. Together, they selected and co-ordinated the electric equipment needed to meet the plant's requirements. This included a 7500-kva turbine-generator, power distribution facilities, and motors and control. G-E field engineers checked initial operation, helped expedite startup.

Most electric power is purchased by the plant at standard 60-cycle frequency. It also generates its own 25-cycle power for some existing equipment, as a by-product of process steam. By a frequency changer that converts 25- to 60-cycle power or vice versa, maximum flexibility in balancing power needs is obtained.

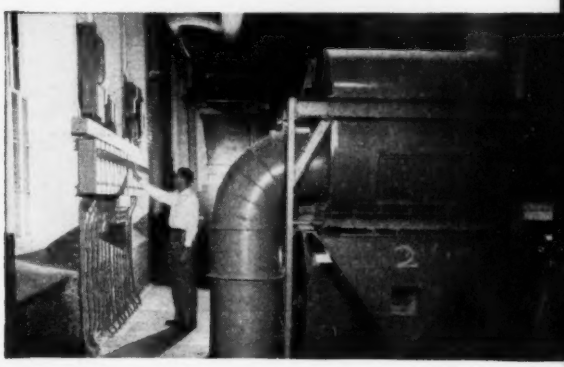
In expanding or modernizing your textile-mill operations, take advantage of the special engineering services available to you through your local G-E Apparatus Sales representative. Call him early in your planning for best results. General Electric Company, Schenectady 5, N. Y. 654-34

Engineered Electrical Systems for Textile Mills

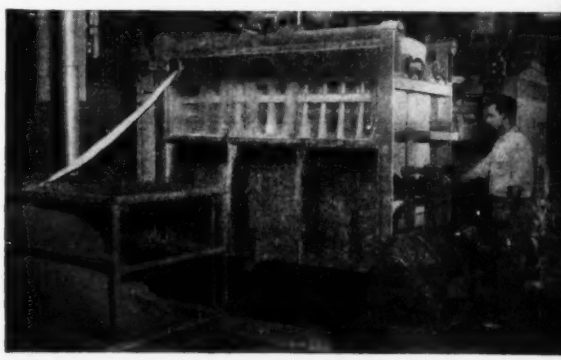
GENERAL ELECTRIC



BLEACHING OPERATION is reliably powered and controlled from this room through G-E motors and starters, multiple-generators, and control panels.



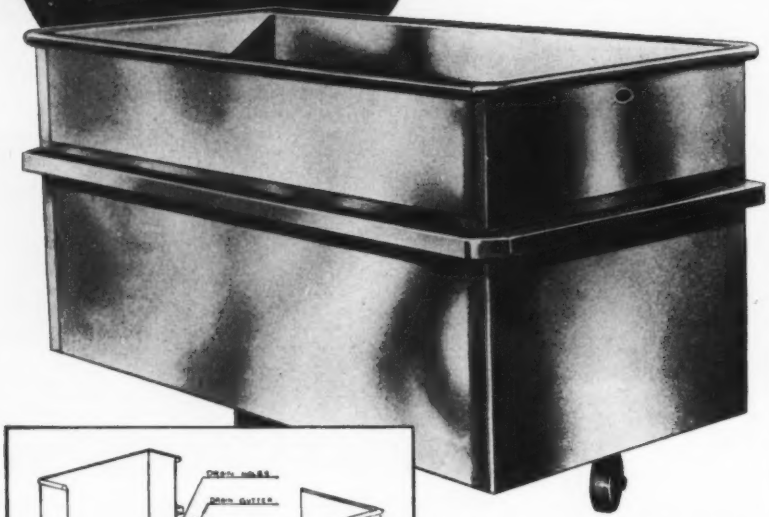
PICKER is controlled from this lineup of G-E combination starters. These space-saving units combine in one enclosure both short-circuit and overload protection.

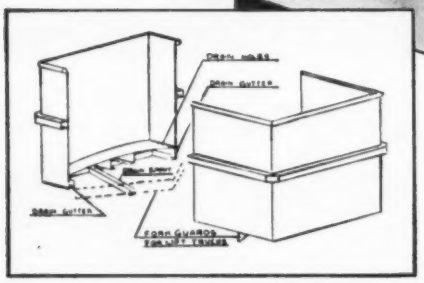


BLEACHING RANGE uses sturdy G-E d-c motors in adjustable-voltage drives. With continuous bleaching, goods are now bleached in 3 hours instead of 32.

WEAVE ROOM uses G-E loom motors, controlled by G-E loom switches, to help meet rigid speed and torque requirements, help maintain maximum output.

GLASCO Stainless Steel... DYE HOUSE TRUCK with Controlled Drainage





Curved bottom drains liquids to sides.

Gutters at sides lead liquids to drainage ducts at either end and discharge toward bottom center of the truck.

For better handling of cloth and more healthful conditions, efficient dyers are using a new type GLASCO Stainless Steel Truck that drains continuously toward the center of the truck.

Effects of this dual drainage are:

1. Truck handlers can stand close to the truck when loading without having water drip on their feet.
2. Goods are *laid* in the truck, not tossed at arm's length.
3. Health conditions are greatly improved.

With the addition of simple guards, drain truck may be rapidly transported by fork lift trucks.

Send for full details

Manufacturers of modern, custom built metal equipment for wet processing uses, including Dye Jig Enclosures, Dye Tubs and Becks, Wash Tubs, etc., of stainless steel and other metals that resist corrosion under most alkali and acid conditions.

GLASCO EQUIPMENT CORP.

Pioneer Fabricators of Stainless Steel Equipment

10 WEST STREET — GLASCO PRODUCTS — PATERSON 4, N. J.

Phila. Area: Marple Organization, 1200 Commercial Trust Bldg., Philadelphia 2, Pa.

New York State: Sanders Industrial Equip. Co., 1351 Broadway, Albany 4, N. Y.

South: Henry H. Hersey Co., 44 Norwood Place, Greenville, So. Car.
New England: Harris & Underhill, 446 Statler Bldg., Boston, Mass.

Dyes and Chemicals

CONTINUED FROM PAGE 116

to be fast to chlorine, light, and washing. According to the producer, the dye fades on tone and holds a constant shade under artificial light.

Circle D-8 on Reader-Service Card

Oil for Fine-Denier Yarns

Nopco Chemical Co., Harrison, N. J., recently announced Nopco 1056-AR, a new addition to its line of processing oils. The oil, designed for fine-denier yarns that demand low tension, is said to give good fiber-to-metal lubrication, adequate antistatic control, and quick spreading action necessary for high-speed equipment.

Circle D-9 on Reader-Service Card

Scouring, Fulling Agent

Richmond Oil, Soap & Chemical Co., Inc., Philadelphia, Pa., recently announced Scourclean X, a product said to be adaptable to most textile scouring operations. Scourclean X reportedly possesses effective soil-removal and soil-suspending qualities, good wetting characteristics, and excellent stability to hard water, acids, and alkalis used in textile processing.

Circle D-10 on Reader-Service Card

Retarding Agent For Hosiery Dyeing

Richmond Oil, Soap & Chemical Co., Inc., Philadelphia, Pa., has announced Rosperse, a new nonionic material said to be useful as a dyebath assistant in dyeing women's full-fashioned and seamless hosiery. The retarding action is said to produce an improved union between monofilament and multifilament nylon yarns.

Circle D-11 on Reader-Service Card

Fatty Acid

Swift & Co., Chicago, Ill., recently announced a new highly distilled fractionated fatty acid known as Oleic Acid No. 905. It was developed for use where high acid number, low titer, color clarity, and stability are necessary. Specifications are reportedly similar to that of a high-grade red oil.

Circle D-12 on Reader-Service Card

Red Dye for Wool

National Aniline Div., Allied Chemical & Dye Corp., New York, N. Y., recently announced National Chromolan Red GRE, the latest addition to National's line of nondusting, premetallized acid dyes. Applied

In planning brine installations, too...

Better let an expert help you!

There's expert advice—and the other kind. And if you want the *right* kind of advice in planning a new brine installation for your plant, or in converting an old one, why not let a specialist help you—a Morton Consulting Engineer?

He is trained to know about all kinds of salt and all kinds of brine installations. His *specialized* experience with salt and brine making qualifies him to help your engineers plan the most efficient and economical installation for your particular needs.

If constructive counsel can be of help to you, get the facts about the Morton Consulting Engineer Service, for which there is no cost or obligation.

Mail the coupon today!

MORTON SALT COMPANY

Industrial Division, Dept. WP-8
120 So. La Salle St.
Chicago 3, Illinois

Please send me more information about the Morton Consulting Engineer Service.

_____
Name and title

Name of firm_____

Address_____

City_____ **Zone**____ **State**_____

LOWELL Shuttles

DOGWOOD OR PERSIMMON FIBRE-COVERED OR PLAIN

1. Shuttle for carpet loom 2. Shuttle for automatic wool or worsted loom 3. Shuttle for plain worsted loom 4. Shuttle for automatic cotton loom (equipped with brass threader) 5. Shuttle for automatic cotton loom (equipped with cast iron threader) 6. Shuttle for silk or rayon loom (equipped with Paterson tension and fibre covered on one side)

LOWELL SHUTTLES, widely recognized for their quality for more than half a century, include automatic and non-automatic types for all kinds of textile fibres and mills. Lowell Fibre Covered shuttles prevent roughing-up of yarns and the covering is applied to stay. The wood is thoroughly seasoned, carefully dried and finished to specifications. Shuttles can be furnished with automatic tension eyes, if desired.

WRITE FOR LOWELL SHUTTLE CIRCULAR

LOWELL SHUTTLE COMPANY

Established 1896 • Incorporated 1914

15 TANNER ST. LOWELL, MASS., U. S. A.

SALES REPRESENTATIVES

Hendrik Van Brederode, 311 Godwin Ave., Midland Park, N. J.; W. P. Russell, P. O. Box 778, Atlanta, Ga.; West Philadelphia Supply Co., Emerald and Somerset Sts., Philadelphia, Pa.; E. B. Smith, P. O. Box 3085, Greenville, S. C.

to wool, the dye produces moderately bright shades of yellowish red.

The product is very soluble and reportedly exhibits very good to excellent fastness to light, washing, perspiration, carbonizing, and cold-water bleeding. It is recommended for dyeing unneutralized carbonized pieces and other woolen materials in a highly acidic condition and for dyeing nylon from an acid bath.

Circle D-13 on Reader-Service Card

Yellowish-Olive Vat Dye For Cotton and Rayon

National Aniline Div., Allied Chemical & Dye Corp., New York, N. Y., has announced National Carbanthrene Olive G Paste, a recent addition to National's line of anthraquinone vat dyes. On cotton and rayon, the dye produces yellowish-olive shades. It is reported to be unaffected by the presence of metals in the dyebath and suitable for use in all types of dyeing equipment.

The dye is said to have excellent fastness to light, commercial laundering, boiling soap, and practically all wet processing. It is recommended for materials subjected to hard usage such as sports and work clothes, uniforms, draperies, and upholstery materials.

Circle D-14 on Reader-Service Card

Garbardines

CONTINUED FROM PAGE 75

Shuttle boxes should be cleaned thoroughly at each warp change. To clean the boxes properly, remove the binders so that all shuttlebox surfaces can be reached easily. While the binders are out, clean them, too.

Train loomfixers to carry a piece of cloth to wipe their hands on. They should also have an apron to fasten over cloth and yarn to prevent stains from greasy parts or tools. Supervisors should insist that this practice is followed at all times.

Tips for Better Weaving

To weave fine gabardines, use only harnesses that are in good condition. Bunched-up heddles are certain to cause warp streaks.

Reeds with damaged dents should be repaired or discarded. One open dent can cause a reed mark that will result in a second-quality cut of cloth.

Temple rings should be taken apart, cleaned, inspected, and lubricated at warp changes. White petroleum jelly provides good lubrication with little chance of staining cloth.

Replace the last ring that holds the selvage with a special ring equipped

When your Processing calls for:

SOAP

call on this All-Star Cast!

OLATE

A neutral, thin-flaked soap containing 92% anhydrous soap. Made from carefully selected and highly refined oils of approximately 12°C titer. Highly resistant to oxidation, rancidity and odor development. Olate dissolves more readily, rinses more freely and forms more fluid solutions than medium or high titer soaps. Excellent for scouring and fulling woolens and worsteds. Equally efficient for processing other fibers.

NONPAREIL

A neutral, light-colored flake containing 92% anhydrous soap. Made from high-grade, medium titer stocks. An efficient all-purpose soap which can be used alone or with alkalies for processing all types of textile fabrics. Nonpareil forms fluid solutions with greater viscosity than Olate solutions of equal concentrations. Readily soluble and free rinsing. Good scouring properties at all temperatures. Widely used for fulling and scouring.

AMBER
FLAKES AND GRANULES

A light-colored, neutral, top-grade 42°C titer soap made from carefully selected fats exceptionally resistant to oxidation, rancidity and discoloration. The standard in the textile industry for tallow-type soaps. Contains 88% anhydrous soap. Amber builds an unusually sturdy suds which performs efficiently where heavy-bodied fulling solutions are desirable.

IVORY
CHIPS AND BEADS

A medium titer, neutral, white soap containing 90% anhydrous soap. Made from highest quality refined oils and fats. Dissolves readily, producing quick, stable suds at all temperatures. Very resistant to oxidation and discoloration when left in textile fabrics or when used as a textile finish. Excellent for processing all types of fibers.

Your jobber has stocks of these fine, time-tested Procter & Gamble textile soaps. Use them with confidence.

Procter & Gamble

Textile Finishes Sales Department
Cincinnati, Ohio

MAKERS OF PROFINE, KYRO, ORVUS AND PROXOL BRANDS

Research... cornerstone of advanced instrumentation

RESEARCH is a job that never ends. This holds particularly true in the field of instrumentation, for every advance in manufacturing procedures brings a demand for better techniques for measurement and control.

But research, to fulfill its true function, must do more than keep pace with progress. In Honeywell's Industrial Division, research points far beyond today's frontiers. Here, skilled scientists are intensively engaged in programs that are developing solutions not only for present problems, but also for the much more demanding applications of the future. Drawing on the related sciences of physics, electronics, metallurgy, chemistry and nucleonics, they are helping to bring instrumentation into its own as a new and essential science. Fundamental research, which attacks control problems in their most basic aspects, is supplemented by development studies to evolve practical equipment for factory use. Working in close cooperation with research, Honeywell application engineers translate new developments into working systems, custom-fitted to today's process requirements.

Covers all phases of control

Each of Honeywell's several laboratories works in specialized but related phases of instrumentation.

The primary elements laboratory, for example, searches into ways to improve the performance of today's elements—and to utilize the latest scientific discoveries in producing new detecting devices with greater range, speed, flexibility and accuracy.

In the precision measurement laboratory, Honeywell's own "Bureau of Standards" performs the most exacting electrical and mechanical measurements to provide precise evaluation of new developments.

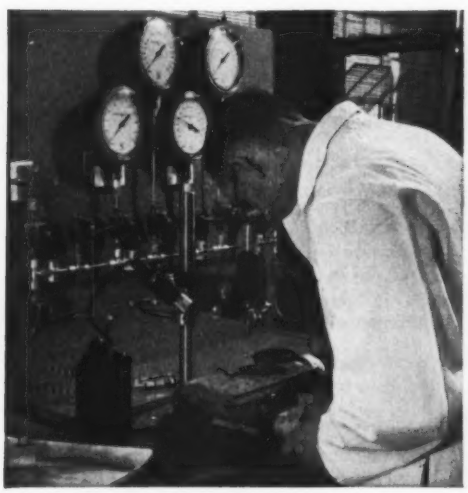
The nuclear engineering laboratory develops specialized techniques of measurement and control essential to the nation's accelerated atomic energy program.

The servomechanisms laboratory studies the techniques which will be needed to control the "automatic factory" of the future . . . operates processes in miniature, and analyzes their control performance.

What of tomorrow?

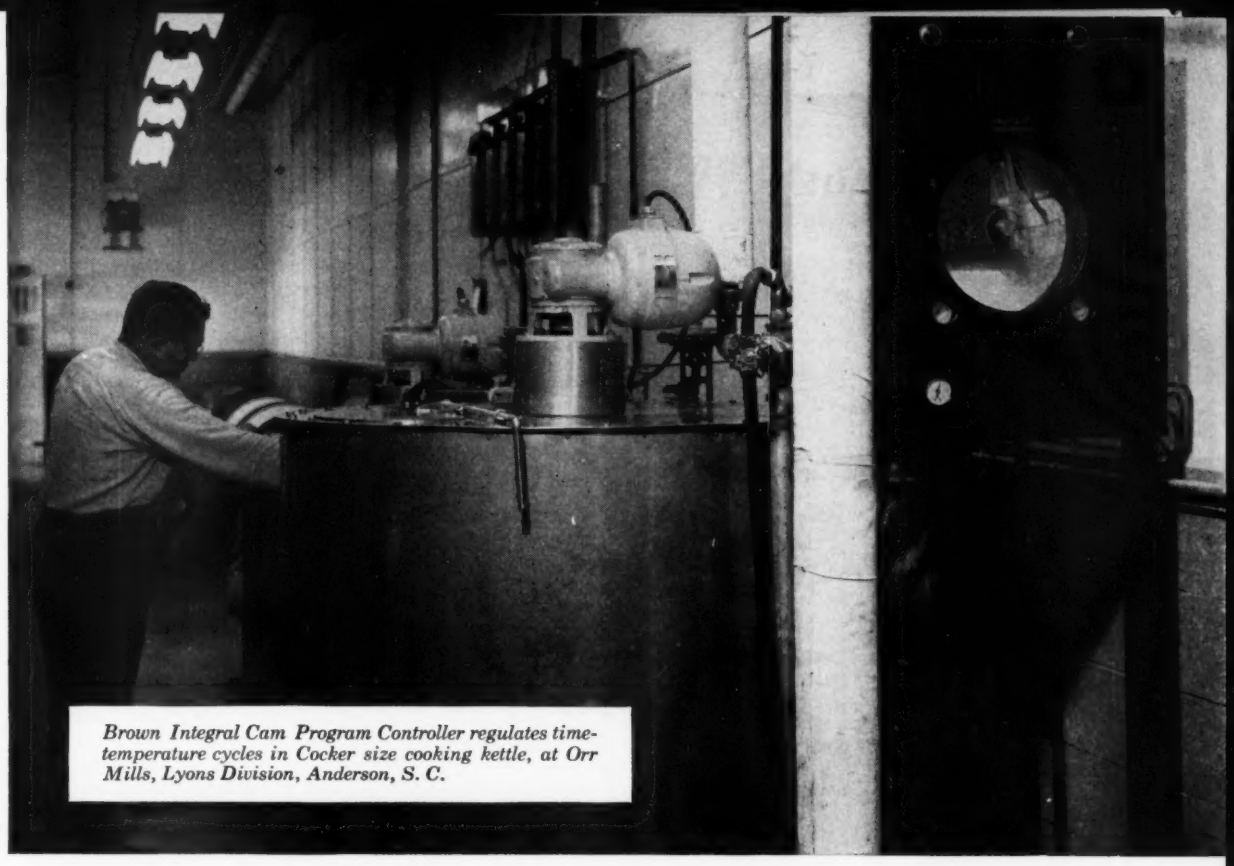
To the instrument user—in factory or laboratory—Honeywell's research has twofold significance. It assures continued refinement of instrumentation for the measurement and control work that's to be done today. And it promises new and revolutionary equipment from Honeywell . . . "First in Controls" . . . for the increasingly important role that instrumentation will play in tomorrow's world.

Space-saving, *for kettle*



PRECISION MEASUREMENTS *aid study of new pressure measuring elements.*

NEW CONTROL TECHNIQUES *are developed in the servomechanisms laboratory.*



Brown Integral Cam Program Controller regulates time-temperature cycles in Cocker size cooking kettle, at Orr Mills, Lyons Division, Anderson, S. C.

cost-cutting control *time-temperature programs*

THE Brown Integral Cam Programmer sets new standards for compactness and flexibility of time-pattern control for dyeing and size cooking kettles. This single instrument now does the work that formerly required two to four separate units!

Housed in one case is the entire system for recording and automatically regulating two independent temperature programs. Program cams are mounted integrally with the controller. There is a separate recording pen and cam for each controlled variable. Cams can rotate at the same or different speeds, over a range from ½ hour to 24 hours per revolution.

Either electric or pneumatic control can be provided. The controller can operate signals at critical points in the cycle, and will automatically shut off the kettles at the end of the program.

Cams are readily cut to the desired contour on calibrated discs of clear plastic, through which the process record is readily visible at all times. Changing cams or chart does not interrupt control.

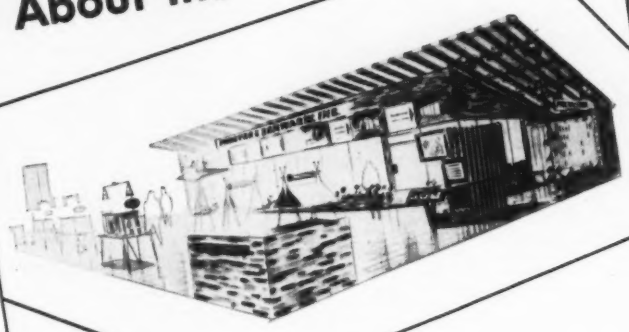
Our local engineering representative will gladly discuss how you can get better control in less space and at lower cost with this versatile instrument. Call him today . . . he's as near as your phone.

MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 4509 Wayne Ave., Philadelphia 44, Pa.

● **REFERENCE DATA: Write for Catalog 6020, "Cam Programmer Thermometers."**

MINNEAPOLIS **Honeywell**
BROWN INSTRUMENTS
First in Controls

Things I Must Remember About the



PROCTOR EXHIBIT

IN BOOTH 506

Write PROCTOR *for more details on Atlantic City Exhibit*

Yarn Report Now Ready Upon Request...

The stock which you saw carded with Proctor Equipment at Atlantic City has now been spun. A report on the results is yours for the asking. *Write for it now.*

You undoubtedly recognize the booklet reproduced above. Distributed at Atlantic City, it proved to be one of the most popular publications in all Proctor history . . . probably because the Atlantic City Exhibit was one of the most forward-looking and helpful we've ever staged!

A post card in the back of that booklet provides a convenient way for you to get more information on the Proctor Equipment you saw. A steady stream of these cards has been coming in. *Mail yours now*, if you haven't done so. Or, if you've mislaid it, drop us a note for more information on

New Synthetic Card
Blending Systems
Loop Dryer-Curer
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Con-O-Matic Washer
Continuous Bleach System for Tubular Knit
Redman Process Machinery
Con-O-Roll Washer
Loop Ager for Print Goods
Preboarding Machine
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Dryers for Carpet
Spray Dryer

P.S. *If you've mislaid your Atlantic City Booklet, write us now for another copy & specify Bulletin 398.*

Proctor & Schwartz, Inc.
PHILADELPHIA 20, PA.

with a multiple row of pins. This ring will help the temple hold the cloth in a straight line. If temples hold the cloth out to the full width of the yarn in the reed, end chafing and breakage will be reduced.

Set filling winders so that the bunch on the bobbins contains at least 4½ picks of filling. Bobbins with less filling tend to cause filling run-outs.

Enough filling should also be left on the bobbins to pull the loose ends out of the shuttle when the empty bobbins fall into the bobbin can. If the amount of filling is insufficient, the loose ends will stay in the shuttle eyes and be woven into the fabric in the form of drag-ins or double picks.

All yarns, both warp and filling, should be tested for evenness and breaking strength. Any variation in standards should be corrected immediately.

Vigoureux Printing

CONTINUED FROM PAGE 79

piled on a stainless-steel basket and allowed to dry overnight.

Color Fixed in Autoclave

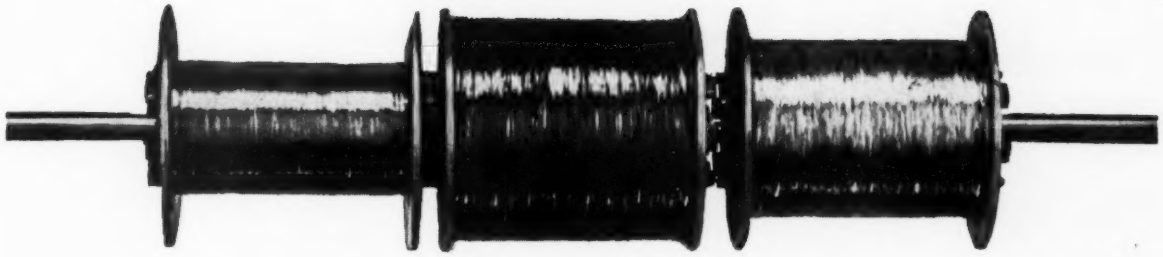
The color is fixed on the wool in an autoclave. Different dyestuffs need suitable steam pressures and temperatures. Acid dyes require no steam pressure, but steam pressure is absolutely necessary for chromium dyes. One mill prefers to cover the wool with a fabric when it is placed in the autoclave. This mill processes printed slubbing at 100 lbs. per hr.

A minimum pressure of 0.75 atmospheres is necessary in the ager. As a general rule, in fixing black and dark colors, a pressure of 0.5 atmospheres and a temperature of 240 to 245° F. is required for a 2-hr. fixing period. For lighter colors, the time is lengthened 1½ times.

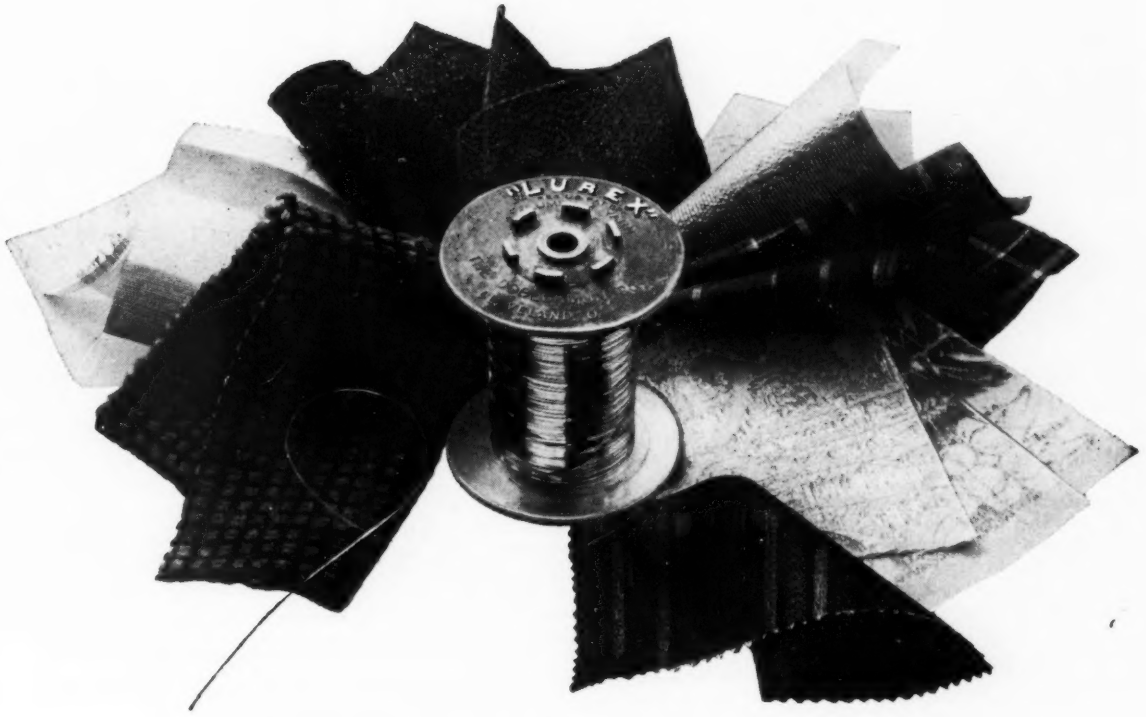
The steam initially used has a high acid content and should be released, as should a small amount of steam all during the process. While too much steaming yellows the undyed wool, too little steaming does not set the color.

In the steaming operation, some of the dye penetrates the unprinted portion of the stock with varying intensity. This random dyeing of the fibers helps produce the complete color uniformity in the top. After the steaming process, the top should be backwashed to remove the excess dye and fixing compound. One run through a five-bowl backwasher will remove all traces of the dye paste.

One man is required to process the top from printing to backwashing.



The thread of the story is LUREX®



There's extra profit—when you run LUREX. Hundreds of mills are successfully using this supple, flexible metallic, not only in all basic weaves, but also in intricate Jacquard constructions. LUREX has been used—in both warp and filling—with *every* fiber, natural and man-made. It is available in supported, unsupported and staple forms.

LUREX, non-tarnishing metallic yarn, made only by the Yarn Division of:

The Dobeckmun Company, Cleveland 1, Ohio, New York: 350 Fifth Avenue

Boston: *43 Leon Street*
Philadelphia: *1801 West Cheltenham Avenue*
Charlotte, N. C.: *510 West 4th Street*
Chicago: *330 South Wells Street*

Manufacturing Affiliates in Canada: *William B. Stewart & Sons, Ltd. Toronto and Montreal*

For more information, write direct or use Reader Service post card.

At Covington Mills
Production went up...
Man-hours went down

Picker laps being transported between departments at Covington Mills.

...and an R-W "Zig-Zag"® Continuous Power Conveyor did the trick!

Not long ago, Covington Mills, Covington, Georgia, faced a serious problem. Production was increasing, yet the transport of picker laps from one department to another was becoming a major bottleneck. Pickers were under the card room in the basement and laps were carried by elevator. The set-up required two pickers, operated in three shifts.

The answer . . . a Richards-Wilcox ZIG-ZAG Continuous Power Conveyor, operating from the opening room, over the top of the weave room to the card room, thus eliminating the need for a third shift in the opening and picking departments and reducing man-hours required for the operation.

The experience of Covington Mills is typical because ZIG-ZAG is designed for maximum flexibility and versatility and it's quality manufactured for longer, lower cost operation. With carrying pendants located on 6-inch centers, ZIG-ZAG is designed to handle any load a man can lift in continuous production. A choice of drive units permits travel at any required speed with variations of 10 to 1 or better. And ZIG-ZAG is easily altered or relocated by plant personnel to meet changing production or space requirements, in most cases using all the parts.

A ZIG-ZAG Conveyor may be needed in your operation. It means more production and lower costs.

Why not write for complete details today—or consult an R-W Engineer, at no obligation, of course.

1880 RICHARDS WILCOX R-W AURORA ILLINOIS Reg. U. S. Pat. Off. 1954

SLIDING DOOR HANGERS & TRACK • FIRE DOORS & FIXTURES • GARAGE DOORS & EQUIPMENT • INDUSTRIAL CONVEYORS & CRANES • SCHOOL WARDROBES & PARTITIONS •

Richards-Wilcox Mfg. Co.
MATERIALS HANDLING DIVISION
Branches in Principal Cities

446 W. THIRD STREET, AURORA, ILLINOIS

Erwin's Finishing Plant

CONTINUED FROM PAGE 73

process and special calender finishes with or without resins. The driers, individually oil fired, can maintain high temperatures for maximum production.

Fabrics Are Delivered Dry

Materials are delivered dry after each operation, a feature at the Cooleemee plant. Dry fabrics result in a light trucking load. Trucking distances between operations are short, and very little space separates the delivery ends of the tenters from the elevator. Two truckers are used per shift.

Heavy chemicals are handled in bulk. Caustic soda, purchased at 73% concentration, is diluted to 50% through a heat exchanger. In the diluting process, position valves regulate the flow of water and caustic, and the specific gravity of the dilute caustic is measured at regular intervals. Glacial acetic acid, bought in tank trucks, is diluted to 84% through rotameters that indicate the flow of water and glacial acetic acid.

Endless Belt Moves Cloth From Folders

On the second floor are six compressive-shrinkage ranges. One of these machines is an 84-in. model for sheetings. At the delivery ends of the ranges are folders.

The nine folders are located alongside a table on which an endless steel conveyor belt moves. The folder operator places the folded cloth on the belt, and the fabric is moved to a point at the end of the table where an automatic tying machine completes the preliminary packaging operation.

Finishing Synthetics

CONTINUED FROM PAGE 88

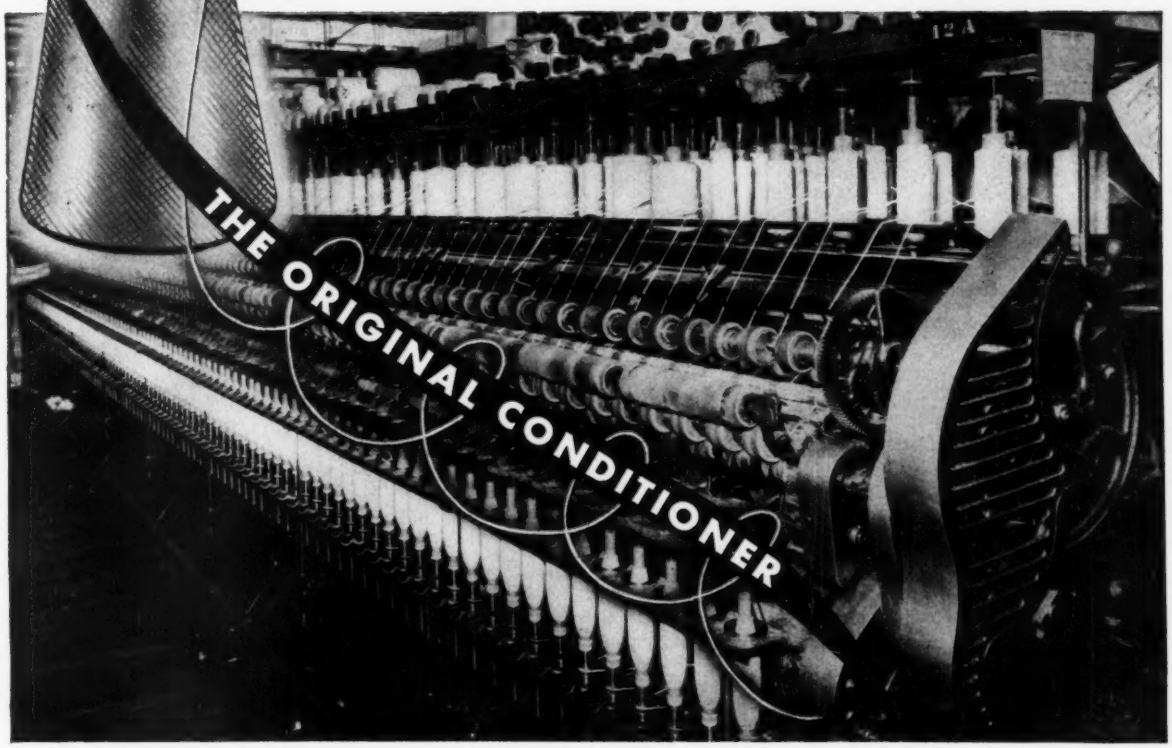
crease pilling. When the fabric is only singed, the long fibers melt and form a hard bead on the surface, giving a very harsh handle. However, when brushing and shearing precede singeing the beads are much smaller and cause a less objectionable handle.

Acrilan-Viscose Blends

The usual crease-resistant finishes, water repellents, etc. can be applied to Acrilan-viscose blends with good results. When pleated properly, the cloth will withstand hand washing with good retention of the pleats.

In past production, the finished appearance of union-dyed dark shades was impaired by fibralation. Fibrala

Specify MINEROL



For Controlled Flexibility

There Is No Substitute for Quality

BORNE SCRYMSER Since 1874

Our Laboratory Facilities are always at your disposal

IN THE opening, picking, carding, and spinning operations — maximum efficiency demands flexibility of fibres — both natural and synthetic. And that is the very function MINEROL performs so satisfactorily.

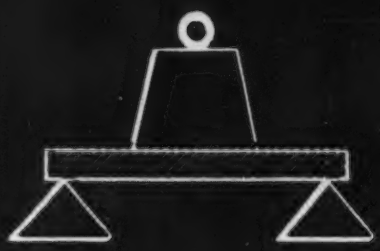
MINEROL not only fits in with modern methods of humidification used by the Textile Industry but actually augments and transcends them. For MINEROL stabilizes processing conditions two ways — (1) by retaining moisture and (2) by lubricating fibres.

As a result, scores of case histories prove that MINEROL not only cuts costs and eliminates waste in time and material, but actually pays for itself in increased production. Better Employee Relations result from reduction in card waste and "fly".

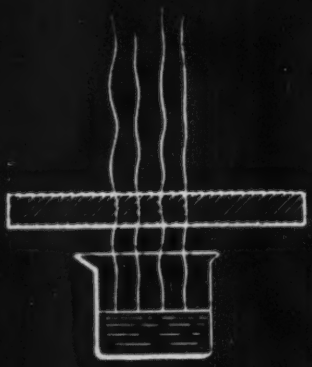
If you would like complete information on MINEROL,—let us know the type, grade, and staple of the fibres you use, whether the fibres are to be carded or combed, and what type of opening or picking equipment you employ. With this information in hand — we'll do the rest.

BORNE, SCRYMSER COMPANY ELIZABETH, N. J. • CHARLOTTE, N. C.

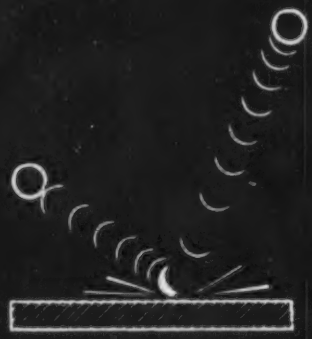
LIGHT
WEIGHT



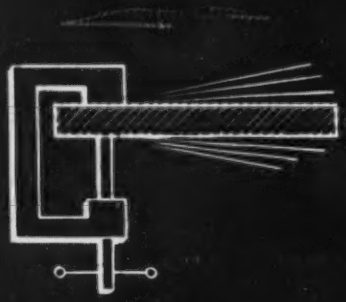
UNUSUAL
STRENGTH



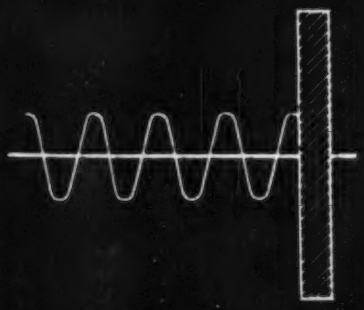
RESISTANCE TO
CORROSION



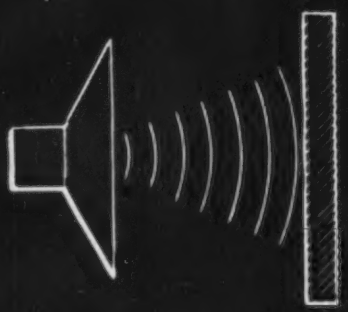
RESISTANCE TO
IMPACT



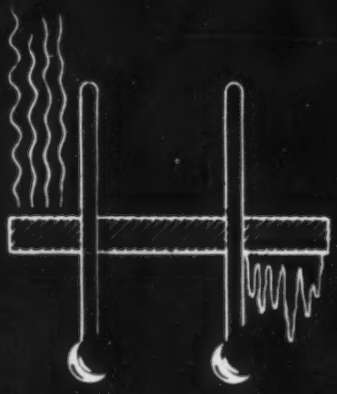
WITHSTANDS
VIBRATION



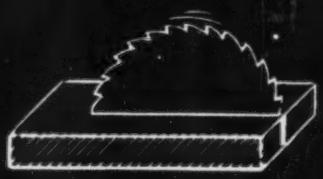
GOOD
INSULATOR



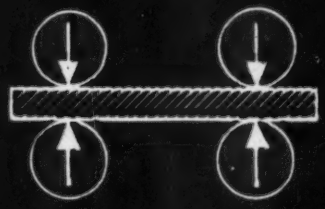
REDUCES
NOISE



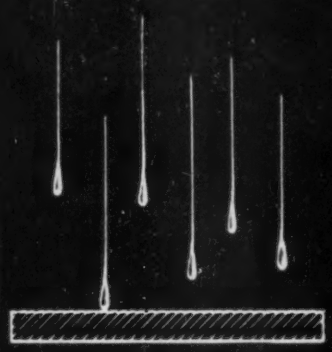
RESISTANCE TO
TEMPERATURE EXTREMES



FABRICATES EASILY,
ACCURATELY



RESISTANCE TO COMPRESSION



RESISTANCE TO MOISTURE

WEARS SLOWLY, EVENLY

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Look into MICARTA's long list of serviceable qualities for practical ways to solve product design and production problems.

Pound for pound its compressive strength is greater than that of structural steel. It weighs only half as much as aluminum. MICARTA's unique resilience lets it absorb repeated shock and vibration without effect. In below zero temperature its tensile strength increases. In high temperatures its impact strength becomes even greater. MICARTA® fights corrosion . . . repels moisture. It's an excellent insulator.

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MARINE: Propeller shaft bearings, bushings, piston rings

STEEL: Roll-neck bearings, hold down and upcoiler rolls

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CHEMICAL: Bubble caps, plating barrels, tubing, valve blocks

ELECTRICAL: Coil forms, terminal blocks, panels, name plates

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Micarta Division
Trafford, Pa.

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Sir: (Please check one)

☐ Please have your representative call
☐ Please send me complete facts on Micarta

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City_____ Zone_____ State_____

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tion might be described as a shattering of the surface of the fiber that results in a white or chafed appearance of the cloth. This condition is said to have been corrected recently.

Dynel

For some time, Dynel has been used in chemical-resistant clothing, filter fabrics, and other industrial fabrics. It is now being used in increasing quantities in blends for apparel.

Here are suggestions for two methods for finishing Dynel-blend woven fabrics:

Method No. 1

If no covered frames are available or if finished goods are expected to give the desired width:

After the goods have been dyed, rinsed, and extracted, dry them in a loop dryer. For light shades, high drying temperatures, such as 320° to 340° F., can be applied. For dark shades, however, to avoid migration it is advisable to dry the goods at low temperatures—225° to 250° F.—and then run them in the loop dryer at temperatures mentioned.

Next, apply the resin and dry at low temperatures. The goods should be fully relaxed in the drying and curing operations. Cure the resin at around 300° F.

The fabric may be stiffened in the first drying operation; but the application of the resin, low-temperature drying, and curing of the resin at a temperature lower than the original setting temperature should result in a soft, pliable hand.

Method No. 2

If the goods are somewhat too narrow or if closed drying equipment is available:

Dye, rinse, and extract. Dry on the frame at a temperature above 300° F., at the same time stretching the goods 2 to 3 ins. in width. There should be slight tension warpwise. After the stretching operation, the goods will shrink about half-way between the dried-cloth width and the stretched width. A slight warp tension will avoid excessive loss in the warp direction.

Apply the resin and dry. No stretching should take place from here on; and if possible, there should be a slight overfeeding (3 to 4%) warpwise.

Cure the resin with the fabric in a relaxed state and with the temperature somewhat below the first drying operation. The high temperatures of initial drying and somewhat lower temperatures in curing should

For more information, write direct or use Reader Service post card.

"PNEUMAFIL*-SPUN"

Yarn

. . . is easier to sell

"PNEUMAFIL*-SPUN" yarn is better quality yarn. "Wild or flying" ends and resultant doublings are eliminated. The "vacuum cleaning" effect provided at each roll boss collects practically all free fibers and fly released in this area. Consequently, there are fewer slubs and gouts, and those caused from cleaning conventional scavenger rolls are eliminated. When Pneumafil* waste is re-run, it is not necessary to use a waste machine which results in more even yarn with greater strengths.

Weavers and knitters *know* "Pneumafil*-Spun" yarn weaves and knits better, resulting in higher quality fabrics . . . that is why . . .

"PNEUMAFIL*-SPUN" yarn is easier to sell . . .

PNEUMAFIL CORPORATION

CHARLOTTE 8, NORTH CAROLINA

Sales Offices: Needham Heights, Massachusetts—Atlanta

*Reg. U.S. Pat. Off.

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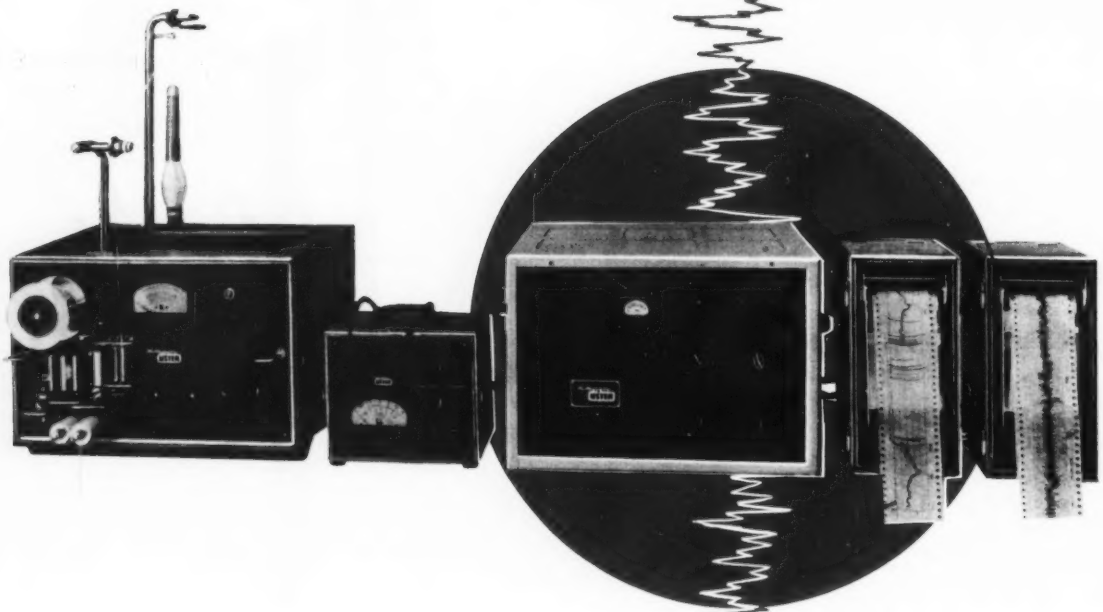
THE SPECTROGRAPH

Another USTER First



THE NEW USTER SPECTROGRAPH . . .

(for direct use with the Uster Evenness Tester). Accurately indicates process causing unevenness from yarn tests alone! . . . Takes the guesswork out of chart evaluation! . . . Multiplies the value of evenness testing many times over! . . . A practical tool that almost thinks! . . . THE SPECTROGRAPH . . . ANOTHER USTER FIRST.

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result in a soft hand without additional operations.

Some fabrics, especially if they are tightly constructed, may be somewhat boardy despite the above precautions. In such a case, they can be run through cold water on a dyebeck for 15 to 20 mins., extracted, and dried at low temperatures without tension; or they can be run through a padder containing a softener and dried at a low temperature.

Type 81 Orlon

Type 81 filament Orlon has been used in shirting goods, with no unusual techniques necessary in finishing. When made into industrial fabrics, Type 81 Orlon may require a carefully controlled setting treatment to minimize shrinkage in subsequent operations.

Fiberglas

In the Coronizing process, glass fabrics are passed through an oven at a temperature of 1,200° F. The organic matter present as size is burned off, leaving pure glass fiber. The heat sets a crimp in the fiber that conforms to the weave, and the handle becomes soft and limp. Exceptional wrinkle resistance also results from this treatment.

However, abrasion resistance is poor at this point. An abrasion-resistant finish is required that doesn't affect the wrinkle resistance; doesn't burn; withstands sunlight, atmospheric gases, and microorganisms; improves the drape; and binds pigments. A finish that meets these specifications is described as an acrylonitrile type of latex. The fabric is padded with this substance and cured.

In the next process, to improve washfastness, the cloth is passed through a second pad containing stearato chromic chloride and then cured.

Dyeing Synthetics Blends

CONTINUED FROM PAGE 89

applicable to dynel in light shades by normal means. But again the shade-build-up power is limited without the use of a copper-ion process; and where the heaviest of shades are desired, the use of a carrier such as para-phenylphenol is necessary.

Recently, some work has been done with dark shades by combining the cuprous-ion process with selected direct dyestuffs capable of withstanding the reduced-copper method of dye-

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CLINTON FOODS INC
CORN PROCESSING DIVISION
CLINTON, IOWA

ing. Carefully controlled, this method has yielded many satisfactory results.

Relustering Variations Can be Controlled

The relustering of Dynel in dry heat appears to have been brought under control in blends comprising not over 30% Dynel to 70% cellulosic fibers. In dyed Dynel, relustering causes increased color depth as drying temperatures increase; but the dyer can anticipate the heat to which the goods will be subjected and treat his hand samples in the same manner for effective control. This control, plus the fact that the Dynel shrinks away from the surface at high temperatures, makes possible the commercial dyeing of Dynel blends.

In blends containing a large predominance of rayon, it is usually necessary to use rayon-finishing techniques.

Dacron

Procedures for dyeing Dacron-rayon blends have been fairly well established. Normally, selected dispersed acetate dyestuffs with a carrier are used for the Dacron and direct dyestuffs for the rayon. No carrier used today measures up to all requirements because of costs, toxicity, handling problems, and difficulty of disposal; but nevertheless, carriers have become part of everyday life for the dyer and have become generally accepted.

One-Bath vs. Two-Bath Method

However, a question has arisen: Is a two-bath process necessarily more expensive than a single-bath process? Whether a Dacron-rayon blend should be dyed by a one- or two-bath process is partly dependent upon the nature of the carrier used.

For instance, Dacron-rayon blends have been effectively union dyed in a single-bath process with the chlorinated-benzene type of carrier. This carrier can be distilled by steam and does not present the same problems as do, for example, phenolic-type carriers. The chlorinated benzenes, however, require efficient ventilation, since the steam distillate can be harmful to people in the area.

On the other hand, the phenolic type does not distill in steam and is more difficult to remove from the fiber. Attempts to wash out the carrier after a single-bath dyeing operation can result in loss of the union because a treatment strong enough to remove a carrier will also remove the unfixed rayon dyestuff.

In a two-bath method, the Dacron is dyed with the prescribed carrier, the fabric is washed to remove the carrier, and the rayon is dyed. A skill-

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NO-732 is made of a special synthetic-rubber compound that develops amazing friction and has just the smoothness needed for high-count weaving. In addition, Armstrong's NO-732 offers long, dependable service. It's backed with tough fabric for extra strength and good adhesion to the roll.

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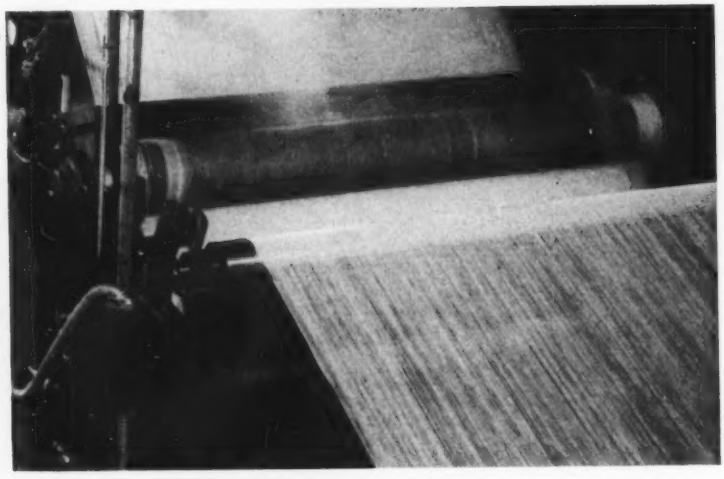

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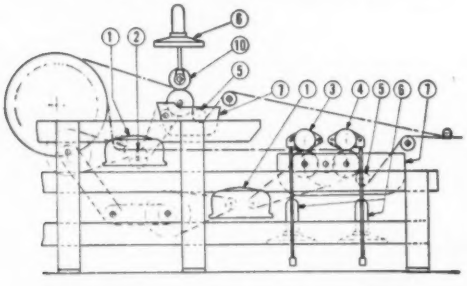

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1 Positive variable speed unit to regulate stretch between quetsch and cylinders.
2 Cut marker.
3 & 4 Four roll double quetsch.
5 Adjustable immersion roll.
6 Air motors for pneumatic loading of quetsch pressures.
7 Large stainless steel direct steam heated solution pan.
10 Two roll single quetsch.

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ful dyer does not necessarily require double dyeing time for a two-bath process.

As a matter of fact, a two-bath method provides a more effective control on the union. Dyeing the Dacron in the first bath for a relatively short time offers a definite advantage, since prolonged dyeing time at elevated temperatures can result in dyestuff agglomeration. With these factors considered, it seems that the short cut is not necessarily the cheapest or best method.

Adding Acetate Complicates Matters

The introduction of cellulose acetate into Dacron-viscose blends creates a problem. Although dispersed acetate dyes are used for both Dacron and acetate, the rates of dyeing are very different. However, a carefully selected dyestuff and carrier can aid union dyeing.

In a Dacron-acetate-rayon blend, the position of the fiber combinations in the fabric is important. For example, in a bengaline where the warp substantially hides the filling, an incomplete union between the Dacron and acetate is not necessarily a severe drawback. However, a construction where every fiber is readily visible makes a complete union necessary.

Some dyestuffs are satisfactorily union dyeing Dacron-cotton blends, although close examination shows the Dacron to be dyed less than the cotton. However, where shade differences between the cotton and Dacron are too apparent, the Dacron can be filled in by any of a number of dyeing techniques. With the good wetfastness of Dacron, the over-all colorfastness of the blend is only slightly impaired.

A method of dyeing Dacron without carriers involves a high-temperature dyeing method such as is accomplished on the recently developed Barotor. It is expected that eventually direct dyestuffs able to withstand the high temperature required for Dacron dyeing will be developed. However, at present best results are being obtained by first dyeing the Dacron component under pressure and then dyeing the rayon in a second bath at normal temperatures.

Orlon

Orlon-cellulosic fiber blends can be piece dyed by three general techniques:

1. A single-bath method using dispersed acetate dyestuffs and regular rayon dyestuffs at 205° F. for shades up to the light-medium range.

2. A two-bath method using selected basic dyestuffs for the Orlon in

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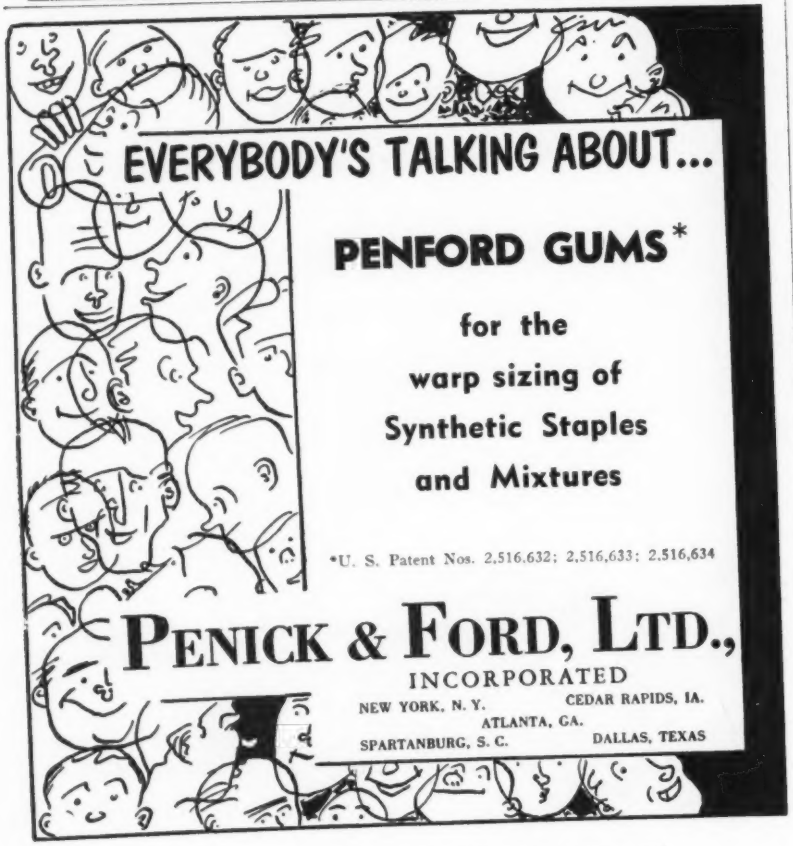

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for the
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and Mixtures

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the first bath. The rayon is then cleaned and a second dyebath brings the rayon up to shade by conventional means. This technique covers the medium to medium-dark range.

3. A two-bath cuprous-ion process in which the Orlon is first dyed by the cuprous-ion method. The rayon is then cleared from the influence of copper and dyed with direct dyestuffs. This technique covers the very heavy shades not obtainable by the use of basic dyestuffs.

There is no great problem in dyeing Orlon-rayon blends with dispersed acetate dyestuffs up to light-medium shades. However, higher temperatures are required than for dyeing acetate and rayon. Lightfastness and wetfastness obtained from this operation are good, but there is a definite limit in shade depth to which Orlon 42 can be dyed with acetate dyestuffs and still maintain good wetfastness.

A full shade range from medium to dark can be obtained on Orlon-rayon blends by using selected basic dyes for the Orlon component in a two-bath process. The basic dyestuffs on Type 42 Orlon are much more wetfast than the direct after-treated dyestuffs on rayon.

In dyeing Type 42 Orlon with basic dyestuffs, it is necessary to maintain temperatures from 207 to 210° F. Below 205° F., the low temperature necessitates an increase in dyeing time and the use of carriers. The lightfastness of the Orlon component dyed with basic dyestuffs in shades above the medium classification is satisfactory for most end uses. With the exception of the green and fuchsin components, the tinctorial power of the selected basic dyestuffs is somewhat low; and attempts to force basic colors into shades too heavy can result in a high cost.

Cuprous-Ion System For Heavy Shades

For the shades not obtainable by basic dyestuffs, the cuprous-ion system of dyeing is used. This method normally requires a two-bath process. The rayon must be cleared of copper before the start of the rayon dyeing operation.

Recently, a number of direct dyestuffs able to withstand the cuprous-ion system have been developed. Carried out at normal pressure, the cuprous-ion method does not produce as wetfast a fabric as do the basic dyestuffs, particularly in alkaline perspiration tests.

The finishing of Orlon-rayon blends is conventional. Where there is a low percentage of the Orlon, the need for rayon finishing is considerable. In

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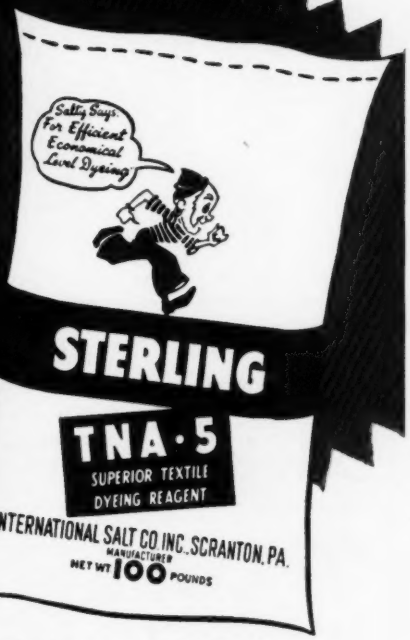

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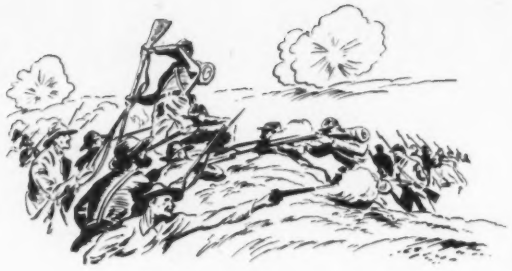

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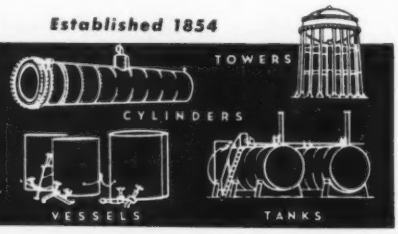

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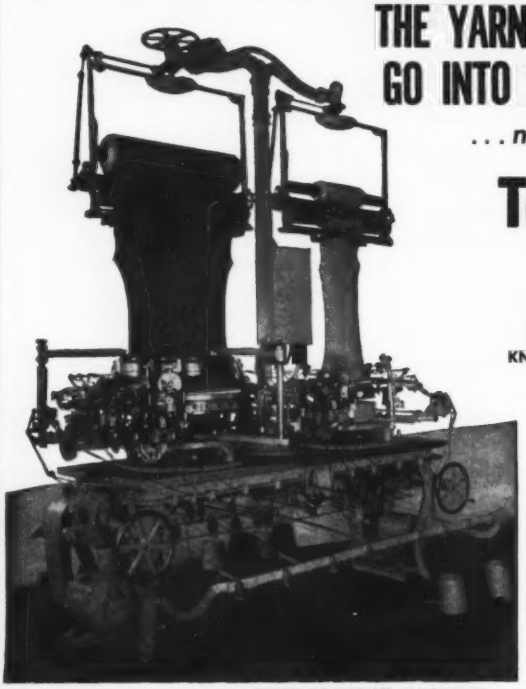

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fabrics with a substantial amount of Orlon, the value of a typical rayon-finishing treatment is extremely doubtful.

Cellulose acetate is not suitable for blending with Orlon and rayon if the Orlon is to be dyed. Both basic colors and the cuprous-ion technique cause considerable uncontrolled staining of the acetate. Dispersed acetate dyestuffs, with more affinity for acetate than for the Orlon, are not too useful for union dyeing.

Acrilan

Acrilan is readily dyeable by conventional methods with dispersed acetate, acid, chrome, neutral-dyeing premetallized, acid dyeing premetallized, and vat dyestuffs. No carriers are necessary. The dispersed acetate dyestuffs will probably be largely used in Acrilan-rayon blends. Here, a range of shades from pastel to black can be obtained at 205° F. in relatively short dyeing periods.

Acrilan dyed with dispersed acetate dyestuffs is wetfast.

After-coppering Acrilan-rayon blends produces a washfast color on the Acrilan component. The dyeing of Acrilan-rayon blends with dispersed acetate dyestuff is like the dyeing of acetate and rayon except that a temperature of 205° F. is required for dark shades.

Neutral-dyeing acid and neutral-dyeing premetallized dyestuffs in conjunction with rayon dyestuffs also give an effective union by a single-bath method and are recommended for end uses where very good lightfastness is required. In this process, the Acrilan is first dyed under a weak acid condition, the fabric is neutralized, and the rayon is dyed.

Single-bath cross dyes can also be obtained with selected acetate and direct dyestuffs.

Pointers for Supervisors

CONTINUED FROM PAGE 99

Secondly, we assume that the type of conduct approved informally by the work group is in line with the goals and objectives of the company. Where there are featherbedding, restriction of output, and other practices that adversely affect a company's competitive position, such an assumption is unfounded.

To rely on self-discipline is to invite trouble unless there is real evidence that both the work group and the company are working toward the same goals or objectives.

Discipline in industry is not strictly

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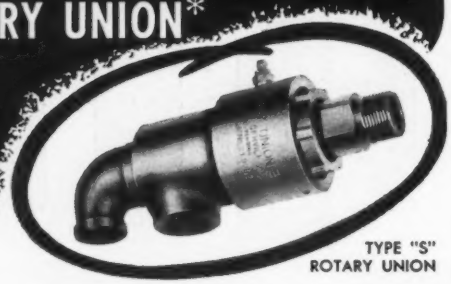

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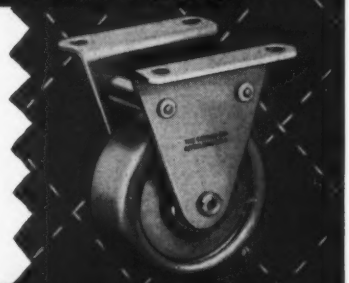

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parallel, as some writers erroneously suppose, to punishment for crime. We needn't theorize as to the basic function of our penal system—whether retribution, rehabilitation, or whatever—to arrive at a sensible view of industrial discipline.

Disciplinary rules in industry are a codified way of acting and getting along together so that a company can properly conduct its business. Industry is not interested in retribution and cannot undertake rehabilitation in any comprehensive way. Its purpose is neither to make people "good" nor to see that the "bad" people suffer. It merely seeks the sort of conduct from employees that will permit orderly progress toward company objectives. Where an employee willfully does not give such conduct, some action must be taken that, while fair to the employee, will protect other employees and serve the good of the company.

It would appear, therefore, that the rules of conduct must be defined. They need not be numerous, but they must be understandable. And they must be consistently administered. This does not mean that the merits of individual cases may be ignored in a desire for conformity. It suggests that in certain rare types of cases, we must look far beyond the act itself. But in most instances, where willful conduct can be established, the search for extenuating circumstances should not lead us up an endless maze.

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fayette St., New York 13, N. Y. There are two types: single-phase input from ½ to 3 hp.; and three-phase input from ½ to 75 hp. A single knob controls the speed. (U-2)

Stool-Height Adjustment

A seat-height adjusting mechanism is available for swivel stools and chairs made by Royal Metal Mfg. Co., Chicago, Ill. The new device enables the seater to adjust the stool or chair while seated. (U-3)

Automatic Pipe Welding

Automatic pipe welding is announced by E. C. Wolferz Alloy Equipment, Belleville, N. J. Besides the savings due to faster production, the automatic process assures a more-uniform weld, with complete penetration of the seam, with or without an inside bead. (U-4)

Temperature Control

A new temperature-control valve has been announced by Klipfel Valves, Inc., Hamilton, Ohio. The new valve is pilot operated and is a "tight-closing" valve. The 5- and 6-in. sizes are double seated; smaller valves are single seated. The valve has a 50° F. range of adjustment, with several capacities available. (U-5)

Automatic Transfer

New automatic package transfer for conveyor systems has an air cylinder that raises a set of V-belt elements to lift the package above the rollers and transfer it to the adjacent conveyor line. The controls work from a limit switch or photoelectric cell. Alvey Conveyor Mfg. Co., 9301 Olive St. Road, St. Louis 24, Mo., makes the equipment. (U-6)

Label Printed, Attached

Label is printed and attached in one operation with one hand using a portable gadget made by Trig-A-Tape Corp., 117 New York Blvd., Jamaica, N. Y. A snap-in chase permits standard setup changes, and the inked ribbon travels with each label. Label size: ¾x1⅛ ins. The device will also print directly on the product. (U-7)

Floor Padding

Durapad, a vinyl-faced, sponge-rubber floor padding for making soft standing room to reduce foot and ankle fatigue, is available from Durkee-Atwood Co., Minneapolis 13, Minn. The padding is available in 18- and 36-in widths, thicknesses from ¼ to 1 in., and lengths up to 40 yds. (U-8)

Thermostat Valve

A new tank thermostat valve has been announced by Klipfel Valves, Inc., Hamilton, Ohio. It is designed for temperature control on small storage tanks, kettles, dryers, industrial washing machines, and ovens. Its metal-ball inner valve seats tightly, which prevents steam leakage. Standard valves are provided in five 50° ranges from 25 to 275° F.; sizes: ⅜ to 1 in. (U-9)

Lock Nut

A new lock nut has been introduced by Allmetal Screw Products Co., Inc., 821 Steward Ave., Garden City, L. I., N. Y. The

New TOLEDO PIPE CUTTER for Cleaner Smoother Cut-offs!

Heavy Duty Wheel and Roller

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nut is a solid metal piece with a slotted cone shaped in one end with a splined cylinder on the other end. It is designed to go into a countersunk hole. (U-10)

Lintproof Limit Switch

A completely sealed, heavy-duty limit switch, for use on equipment exposed to dirt, dust, abrasives, or liquids, has been developed by Micro Switch, Freeport, Ill. The actuator arm is adjustable through 360° to any of 870 positions. (U-11)

Heavy Duty Pipe Cutter

A heavy-duty pipe cutter is announced by Toledo Pipe Threading Machine Co., Toledo, Ohio. Designed to produce clean, smooth cut-offs with positive action, this wheel-and-roller cutter has a capacity of ⅛- to 2-in. pipe. (U-12)

Taper-Lock Sprockets

Off-the-shelf Taper-Lock sprockets have been extended to include 1½-, 1¾-, and 2-in. pitch sizes according to Dodge Mfg. Co., Mishawaka, Ind. Users of single-strand roller chain can now get sprockets and bushings for chain sizes from 40 through 160 directly from the distributor's shelf. (U-13)

Inert Pump Housing

A new V Series of pumps with unplasticized rigid polyvinyl chloride for the pump block has been announced by Vanton Pump & Equipment Corp., Empire State Building, New York, N. Y. (U-14)

Conveyor Unit

A conveyor booster unit for inclines up to 30° is available from Lamson Corp., Syracuse, N. Y. The unit can be designed into a conveyor system or installed by any competent mechanic for special jobs. Two widths are available: 18 and 30 ins. (U-15)

Solenoid Valve

A new solenoid valve of stainless steel for extremely high pressures, made by Atkomatic Valve Co., Dept. 5282, Indianapolis, Ind., is offered in ¼-, ⅜-, and 1½-in. pipe sizes. The ¼- and ⅜-in. sizes are rated to 2,500 psi.; the 1½-in. size to 3,000 psi. Piston rings compensate for expansion under heat and eliminate sticking. (U-16)

Glass-Fiber Insulation

The Snap-On pipe insulation made by Gustin Bacon Mfg. Co., Kansas City 5, Mo., is now available in sizes from ¾ to 24 ins. The insulation is molded of glass fibers in one piece. (U-17)

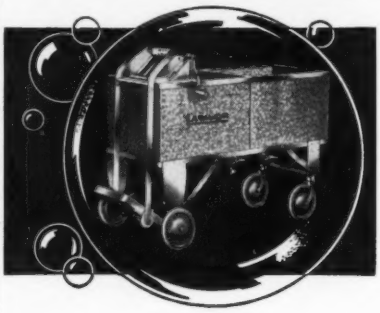
Volatile Rust Inhibitor

A new corrosion inhibitor, VPI-250, has been announced by Shell Oil Co., 50 W. 50th St., New York 20, N. Y. The volatile compound, a white powder, can be applied from a flocking gun, squeeze bottle, or salt shaker. (U-18)

Redesigned Push Buttons

The push-button switches made by General Control Co., Boston 34, Mass., have been redesigned. The new switches have stronger plungers and easier-to-operate

LAWLOR MOPPING TANKS



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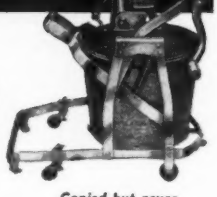
8 styles and sizes of all steel, acetylene welded tanks • 2 or 3 compartments • 30, 60 or 65 gallon capacities • Hand or foot pressure wringers • Perforated roll wringers • Special drain shut-offs • Hot dipped, galvanized chassis and frames • Rubber tired, cadmium plated steel wheels.

LAWLOR MOP WRINGERS



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EASY to bring rolls together; the foot lever is perfectly balanced.

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The LAWLOR No. 2 accommodates any standard round, galvanized pail up to 16-quart capacity. Net weight of wringer—23 pounds.

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- Protective jackets keep out dirt and prolong wear.

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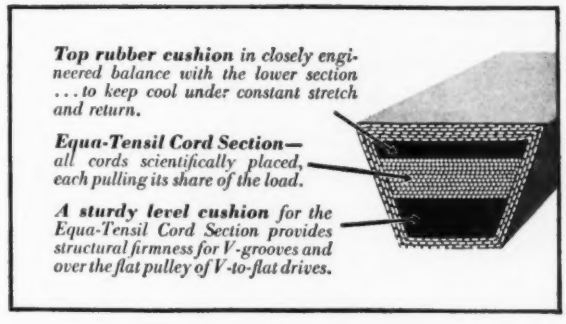
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contact lifters. Units of 2 to 12 switches are mounted on a sturdier frame. (U-19)

A new torque motor developed by Reuland Electric Co., Alhambra, Calif., can be stalled with current on, without damage to the motor. The unit automatically adjusts its speed to intermittent load changes; at the same time, it maintains a constant power. Typical applications: closing or opening and holding contactors, valves, locking devices, and brakes. Standard units from ¼ through 10 ft.-lbs. of torque, with locked-service duty of 5, 10, 25, 50, and 100%, are available. (U-20)

Neoprene Coating

Magic-Vulc neoprene maintenance coating No. 245-B is a thick, paint-like liquid of high solids, which may be brushed or sprayed on most surfaces. No primer or accelerator is required. It is a one-shot coating, ready to use from the can. The standard color is black, but aluminum and other colors are available. (U-21)

Internal Wrench

A new type of internal expanding pipe and tube wrench, known as Tube Tule, is being manufactured by Double T Products Co., Hawthorne, Calif. When expanded in a pipe or tube of any material (metal, fiber, glass, etc.), the wrench exerts a gentle but positive internal grip. (U-22)

Pocket Comparator

A pocket optical instrument for measuring small dimensions is available from National Tool Co., 11200 Madison Ave., Cleveland 2, Ohio. The instrument, which costs $9.75, comes with a 6X lens and a patterned reticle for measuring dimensions from 0.0025 to 0.5 in. in increments of 0.0025 in. Six additional reticles for measuring radii, angles, thicknesses, etc. are available for $4.25. (U-23)

Roller Chain

Double-pitch conveyor and power transmission roller chain is available from Diamond Chain Co., Inc., Indianapolis 7, Ind. The chains, which are American Standard Stock, operate over roller-chain sprockets. (U-24)

Boilers

Boilers with 40, 60, 70, and 80 boiler horsepower capacity, have been added to the boilers made by Cleaver-Brooks Co., Milwaukee 12, Wis. The self-contained units are for installations requiring steam or hot water for processing or heating. Models are available to handle all grades of fuel oil, light distillate No. 2 to 6, or Bunker C. An electric combustion safety control is a feature. (U-25)

Class B Insulating Tape

Bi-Glas, a new high-temperature electrical insulating material, has been introduced by Electro-Technical Products Div. of Sun Chemical Corp., Nutley 10, N. J. As a Class B insulating material, Bi-Glas will withstand operating temperatures up to 150° C. It is available in tape form. (U-26)

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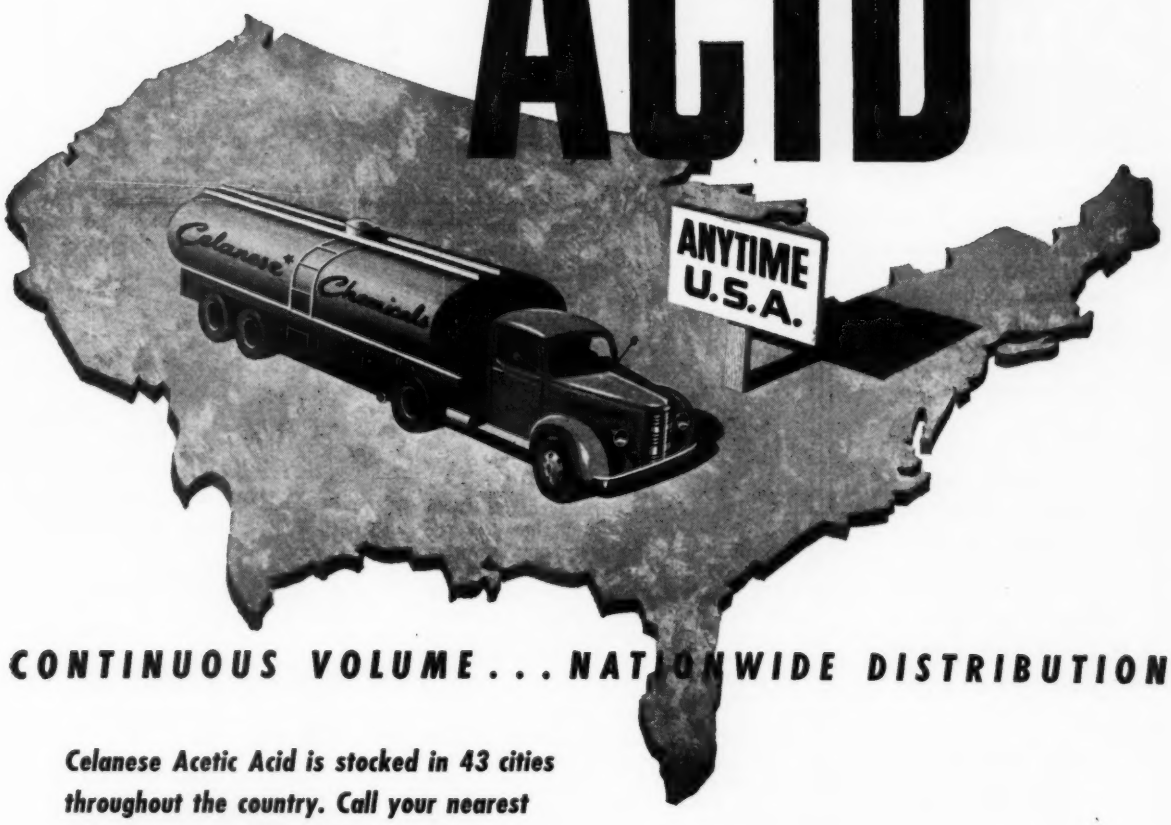

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Books of Interest

New Edition of Matthew's Textile Fibers

MATTHEWS' TEXTILE FIBERS, Sixth Edition, Edited by Herbert R. Mauersberger; John Wiley & Sons, Inc., 440 Fourth Ave., New York 16, N. Y.; $16.50.

Designed primarily as a textbook and a reference book, this new edition describes practically every fiber currently available. The book treats fibers and yarns, not fabrics, and little processing information is given.

A chapter on X-ray diagrams has been added, and the sections on microbiology and static electricity have been completely revised.

If you are interested in the physcial, microscopic, and chemical properties of fibers, this Sixth Edition is for you.

Enlarged Edition of Quality Control by Enrick

QUALITY CONTROL, by Norbert L. Enrick; The Industrial Press, 148 Lafayette St., New York 13, N. Y.; cloth, 181 pages, $4.

In this second edition, 60 pages of new text, tables, and charts have been added. Among the new subjects considered are the coefficient of variation, how to test a distribution for normality, how and when to use control charts computed from center lines, the use of acceptance control charts for accepting or rejecting a product received from an outside supplier, the interpretation of frequency distribution curves, and the analysis of variations between machines and departments as an aid in locating sources of product difficulty. Carding is used as the analysis-of-variance example.

All the essential techniques of modern quality control are covered, such as sampling plans, control charts, analysis of variations, and statistical determination of tolerances, as well as administrative procedures and controls.

A simple direct approach is used, and highly technical language and complicated formulas are avoided.

Dacron Is Superior As Parachute Yarn

A STUDY OF THE EFFECT OF TEMPERATURE ON TEXTILE MATERIALS (PB 111240); Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C.; 181 pages $2.

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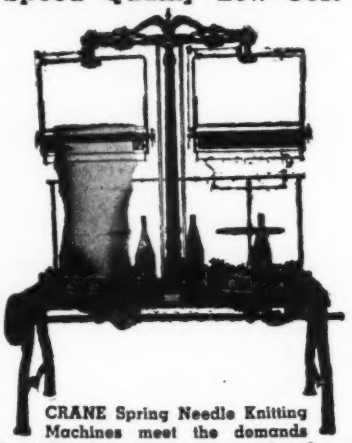

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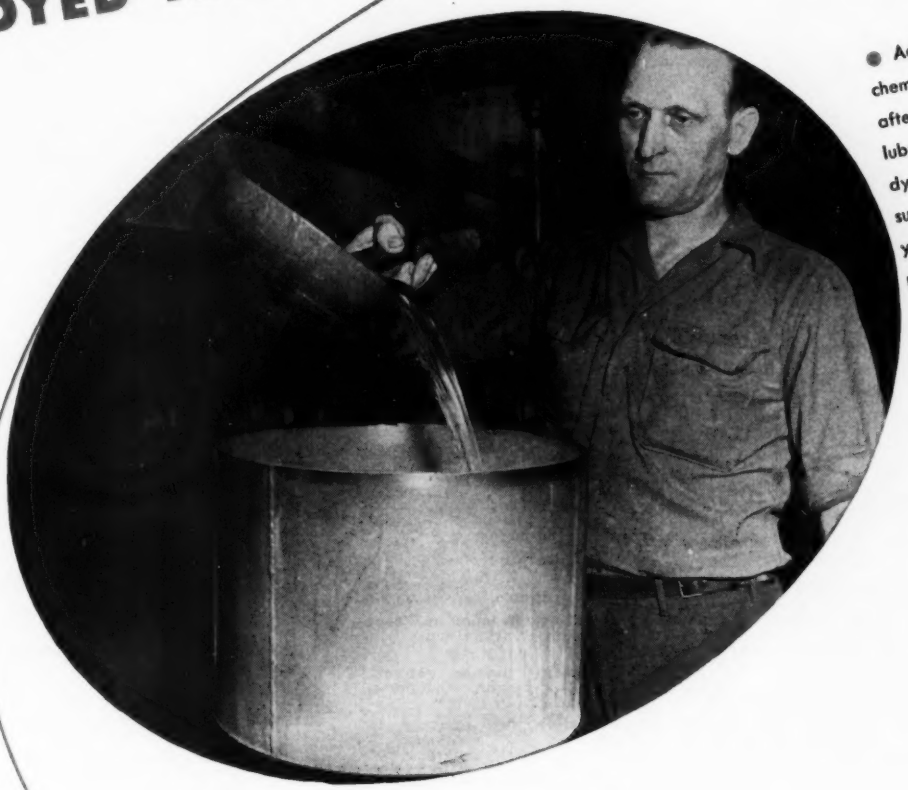

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Avisco textile chemicals are developed in cooperation with and are manufactured by the Atlas Powder Company, Wilmington, Delaware

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thetic parachute yarns are described in this report from the Wright Air Development Center. Eight filament and four staple yarns were evaluated at temperatures from —70 to 375° F. Dacron yarn showed especially high resistance to hot-air degradation and was superior in most of the properties studied. These properties include breaking tenacity, yield tenacity, elongation, initial modulus, loop tenacity, energy absorbed, and heat shrinkage. Test procedures are described.

Chemical Treatment Increases Hemp Elongation

MODIFICATION OF THE PHYSICAL PROPERTIES OF HARD FIBERS THROUGH CHEMICAL TREATMENT, Technical Report No. 5 (PB 113309), Office of Naval Research; Library of Congress, Publication Board Project, Washington 25, D. C.; 43 pages, Microfilm $2.75, photostat $6.50.

In this volume, significant increases in wet and dry elongation of abaca (Manila hemp), without loss of tensile strength, are reported. Increases in dry and wet elongations to rupture were as much as 300 and 400%, respectively. The treatment, in which the fibers are immersed in caustic soda and then in a Volan solution (methacrylato chromic chloride), was developed in a research program aimed at improving the properties of abaca in cordage structures.

Consideration is given to abaca by itself and in blends with sisal and henequen. Modifications in cell structure as a result of the chemical treatment are illustrated.

Textile Calendar

1954

August

Short Course on Textile Quality Control, N. C. State College School of Textiles, Raleigh, N. C., August 9 to 13.

September

Canadian Textile Seminar, Queen's University, Kingston, Ontario, Sept. 9 to 12.

Textile Institute Conference on Fiber Friction, Ghent University, Ghent, Belgium, Sept. 9 to 13.

AATCC, Piedmont Section, annual meeting, Hotel Barringer, Charlotte, N. C., Sept. 10 and 11.

The Fiber Society, fall meeting, in conjunction with Textile Technical Federation of Canada and Canadian Assn. of Textile Colorists, McGill University, Montreal, Canada, Sept. 13 and 14.

AATCC, national convention, Atlanta Biltmore Hotel, Atlanta, Ga., Sept. 15 to 18.

Combed Yarn Spinners Assn., annual meeting, Grove Park Inn, Ashville, N. C., Sept. 23 and 24.

AATCC, Philadelphia Sect., Penn-Sherwood Hotel, Philadelphia, Pa., Sept. 24.

Textile Operating Executives of Alabama, slashing and weaving, Thach Hall, Alabama Polytechnic Institute, Auburn, Ala., Sept. 25.

Industrial Packaging and Materials Handling Exposition, Competition and Short Course, Chicago Coliseum, Chicago, Ill., Sept. 27 to 30 (course), Sept. 28 to 30 (exposition).

October

American Society for Quality Control, Carolinas Sect., School of Textiles, N. C. State College, Raleigh, N. C., Oct. 1.

Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 4 to 8.

American Institute of Electrical Engineers, Middle Eastern Dist. meeting, textile session, Abraham Lincoln Hotel, Reading, Pa., Oct. 5.

Chemical Finishing Conference, National Cotton Council, Statler Hotel, Washington, D. C., Oct. 7 and 8.

N. C. Textile Mfg. Assn., annual meeting, Carolina Hotel, Pinehurst, N. C., Oct. 14 and 15.

AATCC, Piedmont Sect., annual meeting, Hotel Barringer, Charlotte, N. C., Oct. 16.

National Safety Congress and Exposition, industrial sessions, Conrad Hilton, Congress, Morrison and La Salle hotels, Chicago, Ill., Oct. 18 to 22.

American Society for Quality Control, Textile Div. meeting and New England Conference, Ten Eyck Hotel, Albany, N. Y., Oct. 21 to 23.

Textile Operating Executives of Georgia, slashing and weaving, A. French Textile School, Georgia Tech, Atlanta, Ga., Oct. 23.

November

Southern Textile Conference, American Institute of Electrical Engineers, Textile Subcommittee, N. C. State College, Raleigh, N. C., Nov. 4 and 5.

Carded Yarn Assn., annual convention, Atlanta, Ga., Nov. 11 and 12.

December

AATCC, South Central Sect., Hotel Patten, Chattanooga, Tenn., Dec. 4.

AATCC, Southeastern Sect., Biltmore Hotel, Atlanta, Ga., Dec. 11.

1955

January

American Society for Quality Control, Textile Div., annual meeting, Clemson College School of Textiles, Clemson, S. C., Jan. 27 to 29.

February

Cotton Research Clinic, sponsored by National Cotton Council, Pinehurst, N. C., Feb. 16 to 18.

March

American Cotton Manufacturers Institute, annual meeting, Biltmore Hotel, Palm Beach, Fla., March 31 to April 2.

April

Alabama Cotton Manufacturers Assn., 50th Anniversary meeting, Biloxi, Miss., April 13 to 15.

May

The Fiber Society, spring meeting, School of Textiles, Alabama Polytechnic Institute, Auburn, Ala.,, May 4 and 5.

June

Southern Textile Association, annual **convention,** Mayview Manor, Blowing Rock, N. C., June 16 to 18.

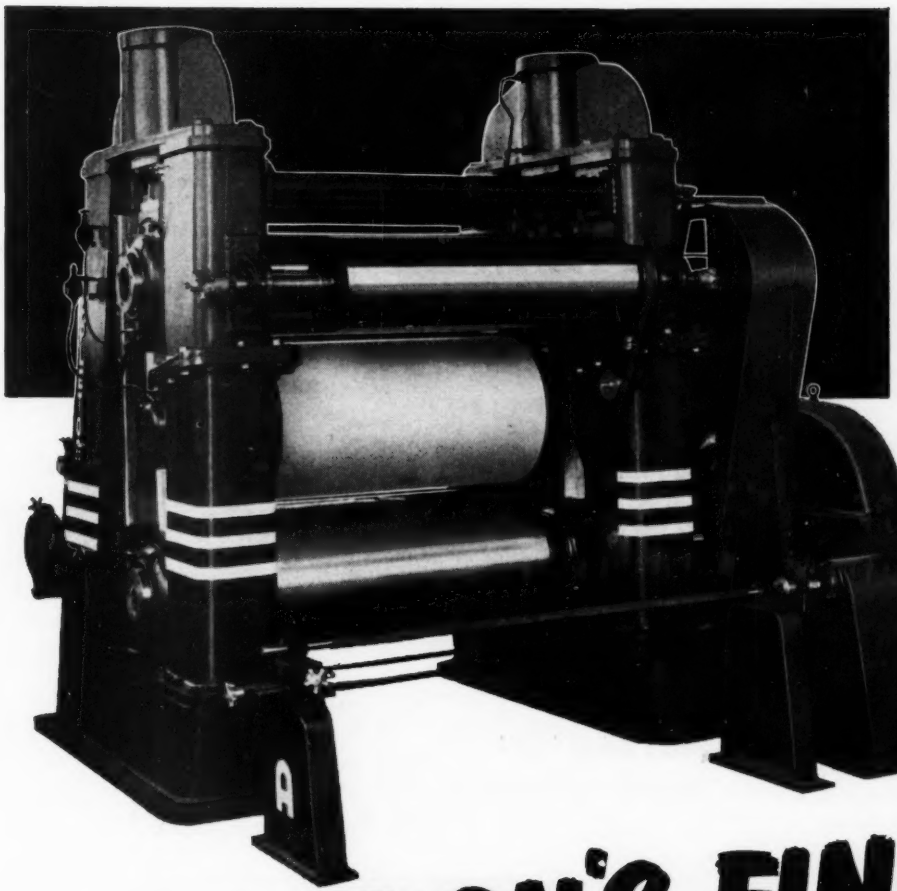
Materials Handling Exposition, International Amphitheatre, Chicago, Ill., June 16 to 20.

International Textile Exhibition, Brussels, Belgium, June 25 to July 10.

September

The Fiber Society, fall meeting, Mass. Institute of Technology, Cambridge, Mass., Sept. 8 and 9.

AATCC, national convention, Chalfonte-Haddon Hall, Atlantic City, N. J., Sept. 21 to 23.



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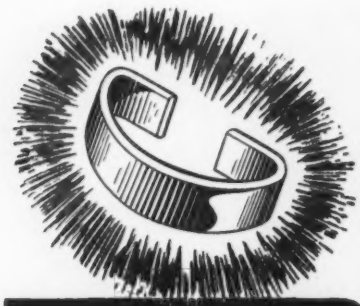

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News of the Month

Cotton Council Headquarters

A permanent headquarters building for the National Cotton Council will be constructed in Memphis, Tenn. It will be built by the Oscar Johnston Cotton Foundation at a cost of $400,000 and leased to the council, and it will be named for Oscar Johnston, the founder and first president of the council.

Miracle Fiber "W"

The insignia introduced last year to identify wool has gained acceptance as the "unofficial trademark" of the wool branch of the textile industry. Over a million hangtags bearing the insignia were placed on wool garments last fall. The insignia reads, "Wonder Fiber Wool, a marvel of nature perfected by man."

Trelon, New Synthetic

Trelon, a new synthetic fiber of the polyamide group, was first shown at the recent Leipzig Trade Fair. Reportedly, the qualities of the fiber are similar to those of nylon and perlon; but Trelon, which is simpler to produce, can be made from low-grade materials. Trelon was developed in the Soviet Zone of Germany.

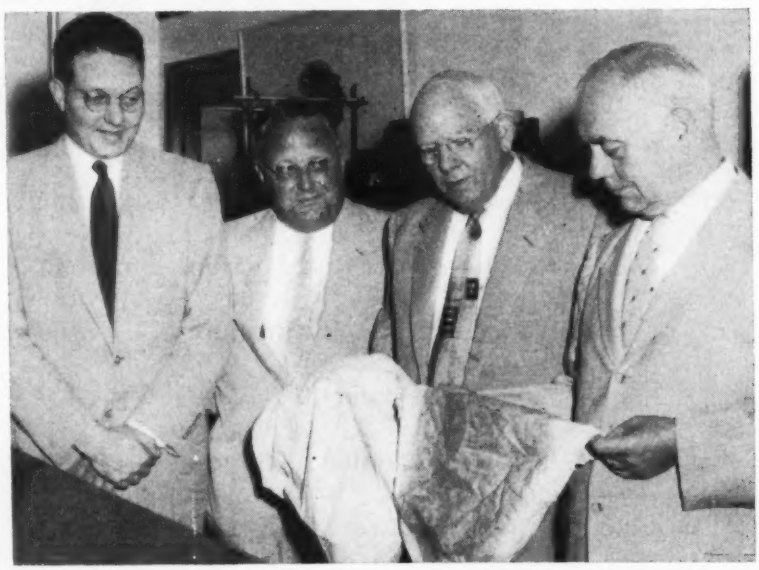
Blends in A.F. Uniforms

Fabrics made of a 50-50 Dacron-viscose blend or a blend of Dacron-wool with not over 60% Dacron or 50% wool are now officially recognized by the U. S. Air Force as optional summer-uniform material for service women.

Government Regulation

The dyers and printers located in and around New York City have requested complete government regulation of their branch of the industry. A law has been proposed by Rep. Can-

Chemical Processing Experts Meet



COLLABORATORS ON RESEARCH for the Cotton Chemical Processing Section of the USDA's Southern Regional Research Laboratory in New Orleans met recently to make suggestions to expedite the research. Two cotton covers for laundry pressing machines are being examined: the acetylated cover is unscorched after being used five times as long as the scorched untreated cover on the right. From left to right, the chemical-processing experts are: T. F. Cooke (American Cyanamid), C. J. Malm (Eastman Kodak), C. F. Goldthwaite (SRRL), and H. Y. Jennings (Dan River).

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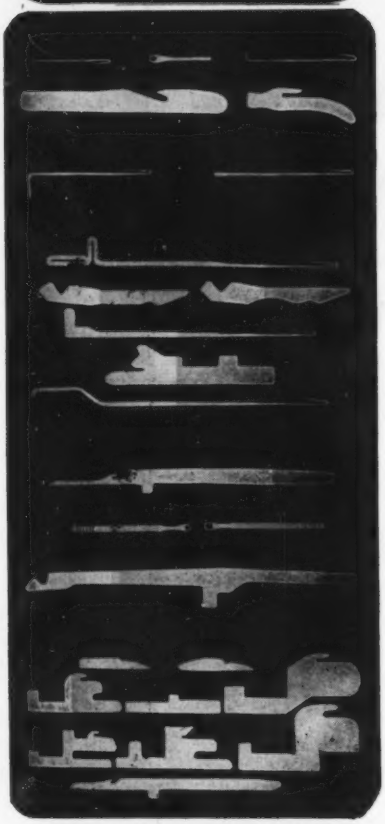
THE LOYAL T. IVES COMPANY

SPRING BEARD KNITTING NEEDLES



The Ives Company manufactures all known types of Spring Beard needles — for circular, full-fashioned and tricot knitting machines.

Also, Sliders, Sinkers, Jacks, Guides, Sley Points, Looper Points, Transfer Points or Quills, for Spring Beard and Latch Needle knitting machines.

Complete line, all gauges and styles of Needles, Guides, Sinkers and Sley Points for Reiner, Avisro and Whitin Tricot machines. Also equipped for complete casting and squaring service for Tricot machines.

NEW BRUNSWICK NEW JERSEY

field (R., N.J.) to set prices and quality standards, require compulsory labeling of man-made fabrics, and provide for licensing of new firms entering the industry.

Remedy To Poor Business

In an Independence Day address to the employees of Russell Mfg. Co., Alexander City, Ala., Thomas D. Russell, president, said that the company's answer to varying market conditions has been to install new machines, new methods, new products, and new designs, coupled with efforts to eliminate wasteful overhead costs. Emphasis has been on even more quality. "Our people are not interested in economic theories," Mr. Russell stated, "But in good jobs with full pay checks."

Advice On Cost Reduction

To keep up with the rest of American business, any company should be able to increase the productivity of its workers by at least 3% a year on the average, according to James D. Wise, president of Bigelow-Sanford Carpet Co., Inc., in a speech to a general management conference of the American Management Assn. But a company still might have to make drastic cost reductions at times. Mr. Wise warned against "across-the-board" reductions in personnel: "Across-the-board reductions imply that people are not doing their jobs, and everyone is immediately on the defensive. Trying to find a better way of doing the job by doing it differently is a more-positive approach."

NFT-ACMI Merger?

The merger talks going on between the National Federation of Textiles and the American Cotton Manufacturers Institute are exploratory, according to a joint statement issued by the two organizations. According to the report, coordinated efforts might be advantageous in the collection of statistics, arbitration of textile products, work with government agencies and bureaus, tax questions, national affairs, and other such matters. No coordinated activities are contemplated in the promotion and merchandising of fabrics.

News Briefs

► A rotating chairmanship of the General Research Advisory Committee of Textile Research Institute has been put into effect. R. D. Wells, director of research, Bates Mfg. Co., is the new chairman. W. H. Charch of Du Pont, the new vice chairman, will take over after two years.

► Railroad officials made it clear at a recent meeting with the National Cotton Council that they have no intention of asking that cotton shipments be placed under supervision of the U. S. Bureau of Explosives.

► A $25,000 library was presented to N. C. State School of Textiles by the Burlington Mills Foundation in honor of Bur-Mil employees who died in World War II.

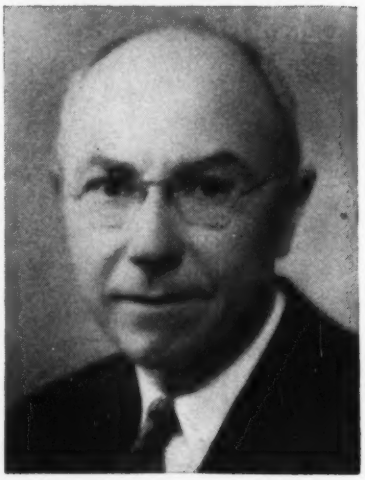
► Textron, Inc., presented a collection of 156 textile-sample books with an estimated value of over $15,000 to the Museum of Art, Rhode Island School of Design.

► Robert T. Stevens, Secretary of the Army and former chairman of the board of J. P. Stevens Co., was awarded an honorary degree of Doctor of Textile Science at the commencement service at N. C. State College.

► A no-raiding pact between the American Federation of Labor and Congress of Industrial Organizations has been signed by the two textile-union affiliates. The pact will run through 1955.

► A new instruction book on jacquard weaving has been added to the International Correspondence School

AATCC Award Winner



WILLIAM D. APPEL, Chief of the Textile Section of the Bureau of Standards, will be awarded the Olney Medal at the annual convention of the American Association of Textile Chemists and Colorists (Atlanta Biltmore Hotel, Atlanta, Ga., Sept. 15 to 18). The medal is awarded annually to a U. S. citizen for outstanding achievement in the field of textile chemistry. Mr. Appel is a past president (1944-46) of the AATCC.

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Keep the Fact File Issue at your fingertips, day in and day out, for it will provide you with a reliable source of buying and reference material tailored to your needs. Here are some of its time-saving features . . .

MILL REFERENCE DATA — This section will contain over 65 pages devoted to charts, tables and formulas designed to provide short cuts and save time. There will be information on properties of the latest fibers as well as production data on carding, spinning, throwing, knitting, weaving, dyeing and finishing. All this, will be presented in easy-to-find tabular form wherever possible.

BUYERS' GUIDE — In the Classified List of this section you will find thousands of product headings for machinery, equipment, chemicals, dyestuffs, and supplies together with the names and addresses of manufacturers. Companies supplying services to the industry—factoring, engineering, commission work, etc. will also be included. All product headings have been cross-referenced wherever possible to make this list as easy-to-use and up-to-date as possible.

Hundreds of manufacturers will supplement their product listings with detailed information on their products. This information will be page-referenced in the Classified List to give you complete data on a product or service.

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national Correspondence School courses. The 105-page text was written by Thomas Hargreaves, general superintendent of Caldwell Linen Mills in Canada.

► "Cotton Textiles—An Opportunity in Texas," has been published by University of Texas. The book presents details on Texas markets, labor, water, cotton resources, climate, waste-disposal outlets, taxes, fuel, and power.

► The colorfast seal of the American Institute of Laundering will be available free of charge to cotton and rayon finishers through a new trade service inaugurated by Althouse Chemical Co.

► The New York Quartermaster Purchasing Agency has been moved to Philadelphia, where it has been consolidated with the Philadelphia Quartermaster Depot.

► Hearings to determine the "peril point" for items that carry a 50% or higher tariff rate were started July 13 by the Tariff Commission. Included in the items are rayon-filament and woven-silk fabrics.

Mill Developments

► A waterproof fabric that uses a rubber coating that "breathes" has been developed by Alban Rubber Co., Philadelphia, Pa., manufacturers of rubberized fabrics. The new coating is said to eliminate the traditional disadvantage of waterproof fabrics.

► An all-wool tufted carpet has been introduced by A. & M. Karagheusian, Inc. The carpet will have a loop-pile surface and latex backing, and it will be made in four color combinations in a 12-ft. width.

► Botany Mills, Inc., has distributed to merchandise managers a 1954 Fabric Book containing samples of its leading fabrics for the fall and winter season. All-wool fabrics are featured.

► Burlington Mills Corp. has developed a work-clothes and uniform fabric of a 90-10 Orlon-rayon blend that has resistance to battery damage and stains. The fabric is made in an 8½-oz. per sq. yd., 60-in. width and a 7-oz. per sq. yd., 45-in. width. The fabric has a residual shrinkage of less than 2% and is mildew, moth, and abrasion resistant. A garment made of the fabric can be washed and will retain a crease in wet weather.

► A dish towel woven of viscose yarn has been developed by The Leshner Corp., Hamilton, Ohio, processors of industrial textiles. The viscose towel is said to absorb water twice as fast as cotton and to have twice the "lintless" quality.

Orlon-Fleece Performance

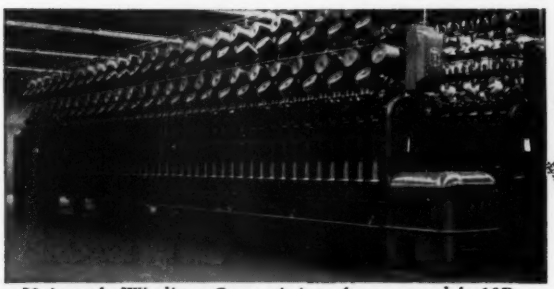
ORLON-FLEECE COAT was wet out and then dried in a tumbler dryer in a shrinkage test by the American Institute of Laundering. After 40 mins. of tumbling at 180 to 215° F., the coat showed a slight discoloration and had lost its soft feel. Shrinkage in length was 12%. In an air-dried test, only 0.3% stretch developed. The cleaning technicians recommend that Orlon be washed as wool, but that it should be air dried.

► A spun-Orlon yarn that gives knitted-jersey sweaters bulk and handle comparable to zephyr and cashmere has been developed by Associated Spinners, Inc., Gastonia, N. C. Called Stretchspun High Bulk, the yarn is made by blending relaxed Orlon fibers with unrelaxed fibers. No mechanical manipulation is used.

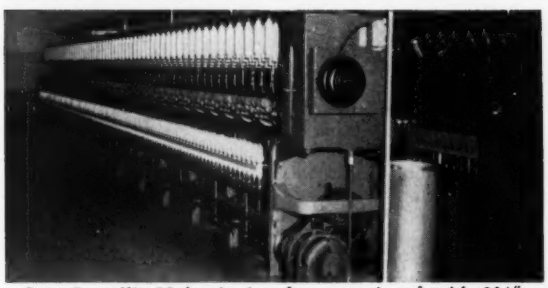
► In a prediction that nonwoven fabrics would be used for outerwear, D. Morgenstern, president of Pellon Corp., said that Pellon samples have passed several apparel tests.

► Aldon Spinning Mills has developed 6s (cotton system) nylon flake yarns and ratines combined with Metlon metallic yarn. End uses will be drapery and upholstery fabrics.

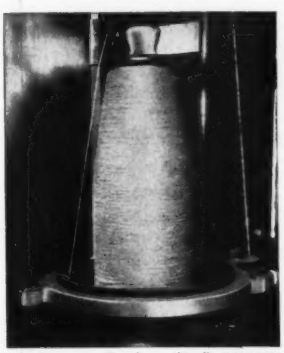
Here's why CHATHAM MFG. CO. uses HERR Conical Rings!



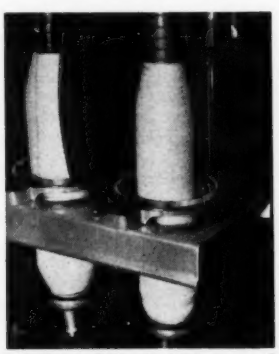
Universal Winding Co. twisting frame, model 10B, equipped with 4¾" HERR Conical Rings.



Saco Lowell's SS-4 spinning frame equipped with 2¾" HERR Conical Rings.



Close-up of the 4¾" HERR Conical Ring used in twisting worsted yarn at the Chatham Mfg. Co.



HERR 2¾" Conical Rings used in spinning worsted yarns.

Says Mr. T. B. Phillips, Superintendent of the worsted division: "In our flexible system, we would be limited with a flange-type ring. The HERR Conical Rings are adaptable to our requirements". The Chatham Manufacturing Co. of Elkin, N. C. is a multi-million dollar firm noted for quality woolen and worsted fabrics.

HERR CONICAL RINGS

easily adapt your equipment for higher speed production of any textile fiber or blend. They prevent yarn breakage, give smoother, cleaner yarn and permit heavier, more uniform doffs. No rewicking is required. You will have fewer ends down because HERR Rings compensate for and equalize yarn tension variations.

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VERSENE REGULAR

pH 2.0 — 7.0

REASON FOR USE
most stable chelate, most economical.
COMMENTS
best chelating agent for iron in acid solutions. Also chelates other polyvalent metals throughout pH range.

VERSENE REGULAR
(original EDTA) — An excellent Chelating (complexing) Agent for iron in *acid* pH range. Loses effectiveness for iron as pH increases above 7. Also chelates other polyvalent metals throughout pH range.

VERSENE Fe-3 SPECIFIC

pH 7.0 — 12.5

REASON FOR USE
very stable chelate, most economical.
COMMENTS
do not use with strong oxidants.

VERSENE Fe-3 SPECIFIC
Efficiently chelates iron in pH range from 7 to 12.5. Quantity of Versene Fe-3 Specific must be increased to keep a given amount of iron in solution as pH increases.

VERSEN-OL®

pH 3.0 — 12.5

REASON FOR USE
first chelates iron, then, until exhausted, deactivates other polyvalent metals.
COMMENTS
do not use with strong oxidants.

VERSEN-OL®
(N-hydroxyethylethylene diamine triacetic acid tri sodium salt.) Similar to Versene Fe-3 in effect. Differs by first inactivating any iron ions present before going on to Ca, Mg and other polyvalent metal ions. Reacts with all polyvalent metals on a mole-to-mole ratio. At high pH's, it loses some efficiency for iron, and more is required.

VERSENE Fe-3

pH 2.0 — 12.5

REASON FOR USE
chelates limited quantities of iron plus large amounts of other metal ions if present.
COMMENTS
ratio of iron in alkaline solution must not be excessive to the Versene Fe-3 used. Strong oxidants may reduce effectiveness of this component.

VERSENE Fe-3
(A physical blend of Versene Regular and Versene Fe-3 Specific.) Combines effect of both compounds but each works independently. The Versene Regular component acts only toward polyvalent metal ions other than iron but the Versene Fe-3 Specific component specifically chelates the iron in alkaline solutions.

VERSENE-T

pH 12.5 to high conc. of Caustic

REASON FOR USE
prevents precipitation of iron or dissolves iron rust in caustic solutions.
COMMENTS
do not use with strong oxidants.

VERSENE-T
Most efficient iron Chelating Agent known for use in caustic solutions. Will not function *unless* free caustic is present. Also chelates other metals including Ca, Mg, Cu, Ni, Co, etc.

NOTE: Iron Chelating Agents containing hydroxyl groups may be oxidized by peroxide, chlorine, hypochlorite, etc. which destroys the ethanolic groups. Hence, only Versene Regular is recommended when complete stability is required in presence of strong oxidants.

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KEY TO CHELATION

NEWS ABOUT Suppliers

EQUIPMENT SUPPLIERS

Acrometal Products, Inc., Minneapolis, Minn., is constructing an 8,000-ft. addition to its present production area. With the new addition the plant will contain 23,000 sq. ft.

Air Reduction Sales Co., New York, N. Y., has appointed J. R. Humberstone president, succeeding H. R. Salisbury, resigned. R. E. Lenhard will succeed Mr. Humberstone as president of the Ohio Chemical & Surgical Equipment Div. in Madison, Wis. S. H. Newburn has been appointed president of Air Reduction of Canada Ltd. D. F. McCandlish succeeds Mr. Newburn as regional manager of the North Central region with offices in Chicago, Ill. S. S. Bruce, Jr., succeeds Mr. McCandlish as Chicago district manager.

Akron Spool & Mfg. Co., Cuyahoga Falls, Ohio, has appointed R. E. L. Holt, Jr., & Associates, Inc., Greensboro, N. C., its representative in Virginia, Kentucky, and North and South Carolina. The Belton C. Plowden Co., Griffin, Ga., has been named representative in Tennessee, Georgia, and Alabama.

American Air Filter Co., Inc., Louisville, Ky., has purchased the plant and equipment of Ice Cooling Appliance Corp., Morrison, Ill. This plant will be operated by American Air Filter's Herman Nelson Div., Moline, Ill.

Babcock & Wilcox Co., Tubular Products Div., Beaver Falls, Pa., has opened a new district sales office in Cincinnati, Ohio. Henry W. Doctor has been named district sales manager and will be in charge of operations in Cincinnati. Russell French has been transferred from the Philadelphia, Pa., office to Cincinnati.

Bailey Meter Co., Cleveland, Ohio, has moved its Cincinnati office to larger quarters at 2330 Victory Parkway.

CHARLES L. PAINE has been elected president of Courtaulds, Inc., and its subsidiary Courtaulds (Alabama), Inc., Mobile, Ala.

Benjamin Booth Co., Philadelphia, Pa., has named John DeQuattro to its sales staff. Mr. DeQuattro will cover the New England territory.

Colson Corp., Elyria, Ohio, has named L. L. Reed general manager of the Albion, Mich., and Somerville, Mass., plants. These plants were formerly owned by Service Caster & Truck Corp., recently purchased by Colson.

Draper Corp., Hopedale, Mass., has been licensed by Deering, Milliken Research Trust to manufacture Teflon-coated fork grates.

Fairbanks, Morse & Co., Chicago, Ill., has appointed R. H. Morse, III, assistant to the president.

Fisher Mfg. Co., Hartwell, Ga., is reconstructing its plant that was recently destroyed by fire.

Fisher Scientific Co., Pittsburgh, Pa., has named Dr. George L. Buc to the central control staff as technical assistant.

Foster Machine Co., Westfield, Mass., will manufacture the new Foster-Muschamp

only

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"BIG TEN" Features

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3. **Permits less twist. Tests indicate yarn of more even texture.**
4. **Creel boards easily cleaned. Overhead suspension leaves open creels. Blowers more effective.**
5. **Better spinning of spun rayon.**
6. **Easier creeling; less physical effort and fewer motions required.**
7. **Improved brake attachment prevents over-run and backlash.**
8. **Now cadmium plated and stainless steel balls more rust resistant.**
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10. **Easy to install; practically no upkeep.**

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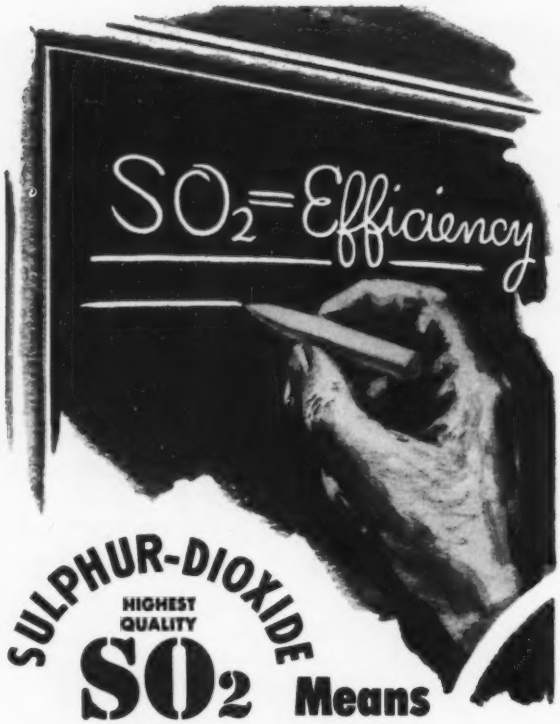

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News About SUPPLIERS (Continued)

Model 66 in its Westfield plant.

Foxboro Co., Foxboro, Mass., is completing its new branch factory in Pittsburgh, Pa. This new plant will double the present instrument assembly, service, and repair facilities. Foxboro opened a new plant in Dallas, Tex., in April and is nearing completion of another new plant in San Leandro, Calif.

Gardner-Denver Co., Quincy, Ill., has elected Gifford V. Leece president and Benjamin C. Essig vice president.

Hunt Loom & Machine Works, Greenville, S. C., has announced the resignation of Thomas T. Patton as president.

Kalman Floor Co., New York, N. Y., has opened an office in the Bona Allen Bldg. at 133 Luckie St., N.W., Atlanta, Ga. Harry A. Pfiffner has been appointed representative in this area.

Laconia Cooper Co., Inc., Laconia, N. H., has been formed to represent the Laconia Needle Co., Inc., Laconia, N. H., and Charles Cooper Co., Inc., Burlington, Vt.

Morse Chain Co., Detroit, Mich., has organized a new application-engineering division within its own engineering department. Ralph E. Cherry will head the department. Earl E. Wesselhoff has been named assistant chief engineer.

New York & New Jersey Lubricant Co., New York, N. Y., has appointed Richard K. Burchett sales representative in the Pittsburgh and western Pennsylvania area.

B. F. Perkins & Son, Inc., Holyoke, Mass., has opened a Southern Sales Div. in Charlotte, N. C. Benjamin C. Trotter is the manager.

Pyrene Mfg. Co. and **C-O-Two Fire Equipment Co.,** Newark, N. J., have elected S. R. Baker chairman and president; F. B. Allen, M. A. Laswell, Louis Levine, and A. F. Ratzer vice presidents; Meyer Botwinik treasurer; B. S. McCabe secretary; and J. R. Zelenka assistant treasurer and assistant secretary. L. E. Eckelmann has been elected a vice president of Pyrene and R. F. Batch and C. S. Duncan assistant secretaries of C-O Two. The board of directors is composed of S. R. Baker, Meyer Botwinik, M. A. Laswell, Harry Levine, Louis Levine, A. F. Ratzner, and Charles Rohrlich.

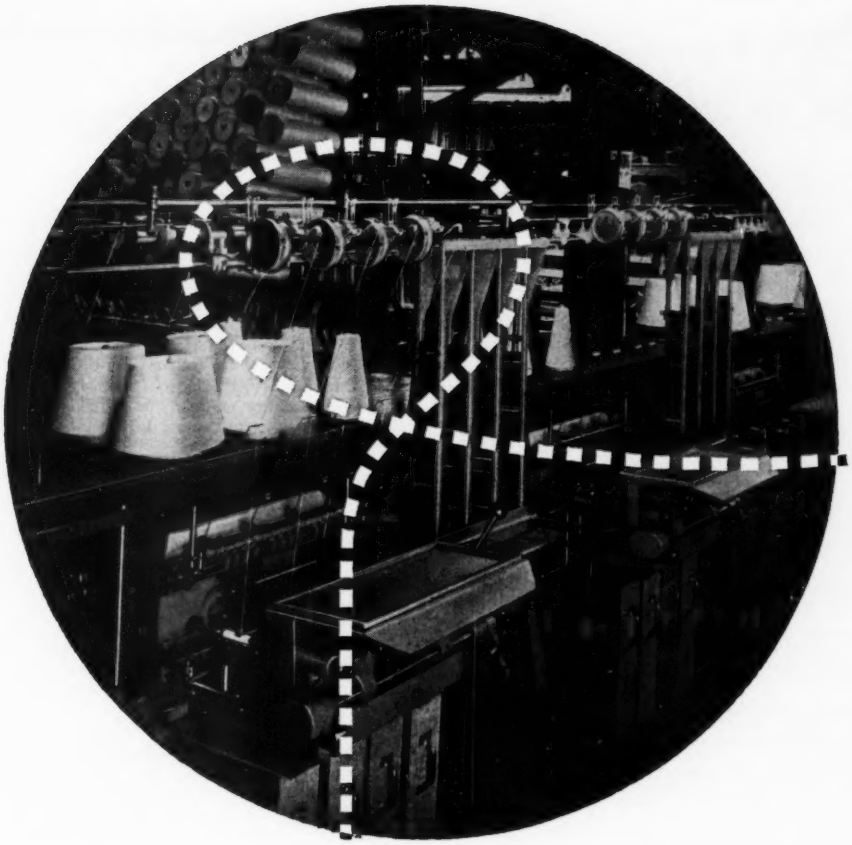
Quaker Rubber Corp., Philadelphia, Pa., has named W. H. Pender manager of belting sales.

Reliance Electric & Engineering Co., Cleveland, Ohio, has named William C. Prettyman to the sales-application engineering staff. Mr. Prettyman will be located in the New York office.

J. O. Ross Engineering Corp., New York, N. Y., has moved the company's Los Angeles branch office to the new Ross plant located at 6417 Bandini Blvd., Los Angeles.

EDWARD H. WEITZEN has been named vice president in charge of marketing at American Machine & Foundry Co., New York, N. Y.

E. G. ROBBINS has been appointed to the position of general manager of construction for Walter Kidde Constructors, Inc., New York, N. Y.



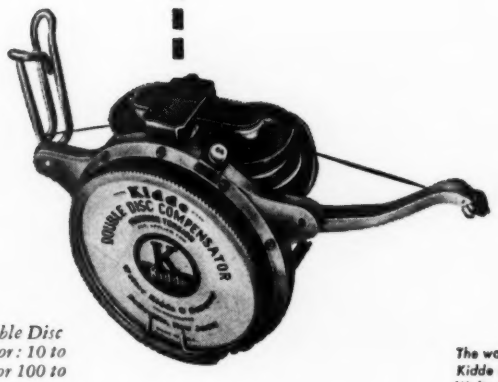
how quill winding is controlled at the Jean Ribbon Mills, Inc.

The Jean Ribbon Mills, Inc. of Paterson, New Jersey, makers of quality narrow fabrics, control quill winding on their German-made Hacoba quiller with Kidde Double Disc Tension Compensators.

They report they have fewer faulty quills, with fabric widths more uniformly controlled. There are closer yardage differences from one quill to another, with an actual increase in yardage. This results in less down time of the loom and reduces yarn waste.

Kidde's complete line of tension compensators is used by more than 500 leading textile mills throughout the nation — a striking tribute to their effectiveness in solving any tension problem.

They can help you turn out better products at less cost! Write today for full information.



Kidde Double Disc Compensator: 10 to 140 grams or 100 to 300 grams.

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A series of articles of interest to those engaged in practical fabric design or in teaching functional design. One article introduces the all-fiber system, which takes the guess out of how many ends and picks to use in changing to a new fabric. Another shows how to change weight without changing structure. Detailed numerical examples are provided. A discussion of yarn diameters, as the basis of structure, opens the series.

SYNTHETIC-FIBER TABLE — **50¢ each, 40¢ in lots of 20 or more**
The latest (1953) edition lists by type and name all U. S. yarns and staple fibers in commercial production. A list of suppliers by type and form of fiber is also included. Valuable related data and a "Terminology and References" section are included. Comparative properties of wool and cotton fibers are included. An explanation of glass-fiber nomenclature and its yarn-numbering system makes conversion to cotton counts easy.

WOOL-SYSTEMS FLOW CHART — **35¢ each, 25¢ in lots of 20 or more**
New (1953) edition shows all the processes in making woolen and worsted fabrics on all yarn systems. Six typical finishing routines are also pictured to cover the main fabric types. The chart includes the manufacture of synthetic and blended fabrics on wool systems.

COTTON FLOW CHART — **25¢ each, 15¢ in lots of 20 or more**
An illustrated step-by-step process chart of cotton manufacturing from bale to finished fabric. Both principal and alternate flows are shown.

CONTINUOUS-FILAMENT FLOW CART — **25¢ each, 15¢ in lots of 20 or more**
Principal and alternate step-by-step process in handling continuous-filament yarns from the case of yarn to the finished fabric (including tire cord) are shown.

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The sequences of processes for the subdivisions of the knitting branch of the industry—women's hosiery, men's full-fashioned hosiery, half-hose, and knitted underwear and outerwear (circular and warp)—are shown and illustrated.

FELT FLOW CHART — **15¢ each, 10¢ in lots of 20 or more**
Manufacture of roll felts, sheet felts, and felt wheels is shown in step-by-step order.

COTTON-FIBER TABLE — **25¢ each, 15¢ in lots of 20 or more**
Revised (1953) edition shows fiber properties and manufacturing performance of the 11 varieties of cotton that make up more than 80% of the U. S. cotton grown. Data given enable mills to save money by selecting the best fiber for the end product.

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These tables permit quick determination of ½ to 25% shrinkage, covering pieces from 50 to 100 yds.

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News About SUPPLIERS (Continued)

The company has enlarged the department devoted to high-pressure, hot-water heating. Erwin A. Hansen has joined this department as sales engineer.

Sterling Electric Motors, Inc., Los Angeles, Calif., has appointed Joseph H. Fallon district sales manager in Cincinnati, Ohio.

Stowe-Woodward, Inc., Newton Upper Falls, Mass., has opened a new plant in Neenah, Wis. This new plant is under the management of William Mordo, assisted by Will Chandonait.

Trumeter Co., New York, N. Y., has appointed Ralph Gossett & Co., Greenville, S. C., its Southern representative.

White Bearings Co., Charlotte, N. C., has been organized by Robert L. White and Carolyn Hood Crawford. The new company will be devoted to specialized ball- and roller-bearing service.

CHEMICAL AND YARN SUPPLIERS

Allied Chemical & Dye Corp., New York, N. Y., has appointed George B. Monk fiber sales and service representative of the National Aniline Div.

American Cyanamid Co., New York, N. Y., dedicated its new Fortier plant near New Orleans, La., recently. This plant represents the first time that Cyanamid has produced industrial chemicals from natural gas.

American Enka Corp., Enka, N. C., is constructing a new $1,130,000 unit adjacent to its present plant. This new unit will contain physical and chemical laboratories, a three-story synthetic-polymer pilot plant, and general administrative offices for research personnel and the patent department.

Bersworth Chemical Co., Framingham, Mass., has changed its name to Versenes, Inc.

Chemstrand Corp., Decatur, Ala., has appointed Harry E. New manager of the Technical Sales Service Div.

Dow Corning Corp., Midland, Mich., has named Ellwood M. Eddington to the textile service department to assist F. L. Dennett in the application of silicone finishes.

E. I. du Pont de Nemours & Co., Inc., Wilmington, Del., has transferred C. W. Jones, Jr., and James A. Shirley, Jr., to the nylon sales office in New York. W. M. McCabe has been transferred from acetate sales to nylon sales in the Charlotte, N. C., office. J. E. D. Irving has been transferred from rayon sales to nylon sales in the Providence, R. I., office.

Emkay Chemical Co., Eliza-

WILLIAM ENGS has been appointed assistant to the president of Stauffer Chemical Co., New York, N. Y.

WARREN H. BRAND has been named director of engineering and research for the Conoflow Corp., Philadelphia, Pa.

News About **SUPPLIERS** (Continued)

beth, N. J., has appointed John F. O'Neill to its research staff.

Food Machinery & Chemical Corp., New York, N. Y., has appointed Dr. Carl F. Prutton vice president and technical director of the Chemical Div.

General Electric Co., Pittsfield, Mass., has appointed Fred M. Pugh manager of the Midwestern sales district.

B. F. Goodrich Chemical Co., Cleveland, Ohio, has appointed Orville E. Isenburg general manager of Harmon Colors, Haledon, N. J.

Goodyear Tire & Rubber Co., Akron, Ohio, has appointed Roy Wallace district manager, with headquarters in Cleveland, Ohio. John H. Drexler will also be located in this office as a special sales representative.

Hercules Powder Co., Wilmington, Del., has appointed John E. Biegner district manager of the Synthetic Dept. in the New York, N. Y., area.

Interchemical Corp., New York, N. Y., has established a new Product Application Engineering Dept. F. L. Wursburg, Jr., will head the department, assisted by Willis E. LeClair. The new department will be concerned with the interrelationship of chemistry and mechanics in the application of chemical coatings.

Pittsburgh Plate Glass Co., Pittsburgh, Pa., has named Richard R. Pryor manager of air-filter-products sales and James G. McGreevy manager of battery-products sales. In the Fiber Glass Div., Paul D. Kaley has been named textile-sales manager and Charles B. Keown manager of superfine sales. Albert W. Stevenson has been named manager of the New York district sales office and Robert M. Hoffman manager of the Chicago district office.

Standard Chemical Products, Inc., Hoboken, N. J., has appointed Lewis C. Greene to its sales staff to cover parts of North and South Carolina and Georgia. His headquarters will be in Greenville, N. C.

Union Bay State Chemical Co., Inc., Cambridge, Mass., has appointed George W. Thurman to the industrial division as a technical sales representative in the Chicago area.

Union Carbide & Carbon Corp., New York, N. Y., has appointed N. C. Babcock, E. E. Fogle, and H. D. Kinsey vice presidents of Carbide & Carbon Chemicals Co. Donald B. Benedict has been named works manager for Carbide & Carbon. In the Industrial Chemicals Sales Div. of Carbide & Carbon, M. W. Duncan, sales representative, has been transferred to Denver, Colo., J. R. Retter to Grand Rapids, Mich., and M. R. Brannen to St. Louis, Mo.

Virginia-Carolina Chemical Corp., Fiber Div., New York, N. Y., has moved to new offices at 99 Park Ave.

A. T. HANES, Jr., has been elected vice president in charge of sales for Sandoz Chemical Works, Inc., New York, N. Y.

GORDON V. HAGER has been promoted to the position of treasurer of America Enka Corp., Enka, N. C.

Silentbloc rolling joint mountings offer a proven way to reduce damaging vibration in textile machinery. In these unique mountings, rubber completely insulates the inner metal member from the outer bolting flange so that the machine bolted to the inner member actually floats on rubber.

Installation is simple too . . . it is necessary to raise the machinery approximately 2½", locate the mountings, and provide three bolts for installation. If needed, adaptors can be provided to adjust the final height of the mounting.

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Assures a quality of product that will more than meet conditions encountered in service.

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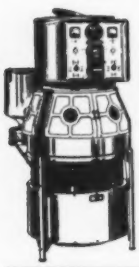
From 21 to 126 samples, depending on size, can be simultaneously exposed to the light of the Atlas Enclosed Carbon Arc. Exact duplicate tests can be repeated at any time. Temperature is controlled automatically and humidity is furnished by evaporation from a constant water reservoir. Operation of the Fade-Ometer is completely automatic, permitting the machine to be left in continuous 24-hour operation.



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All weights and constructions supplied
All wool or part synthetic
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All wool or cotton back

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Cotton warp or linen warp
All standard widths and weights

LAPPING CLOTH
Manufactured to exacting standards for uniformity
Both cotton warp and linen warp
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Complete range of types, sizes, and weights
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NEWS ABOUT Mills

COTTON MILLS

Bama Cotton Mills, Enterprise, Ala., has an expansion program under way that will increase its production about 40%. A new addition is being constructed that will add 24,000 sq. ft. of floor space. Plans call for the addition of 172 new looms.

E. T. Barwick Mills, Dalton, Ga., has acquired Monarch Rug Mills and will operate this plant as an affiliated interest.

Blair Mills, Belton, S. C., has purchased a $30,000 West Point slasher.

Brenham Cotton Mills, Brenham, Tex., has let the general contract to R. B. Butler, Inc., Bryan, Tex., for a new one-story warehouse. Phillip G. Norton, Bryan, is the architect.

Burton-Dixie Corp., Kansas City, Mo., has completed the construction of a new one-story mill containing about 75,000 sq. ft. of floor space. Burton-Dixie is also selecting a site at or near Chicago that will be used for the construction of a new mill.

Carolina Mills, Plant No. 1, Dillon, S. C., has been purchased by Coastal Mills, Inc. Operations will begin soon.

Chicopee Mfg. Corp., Gainsville, Ga., will construct a bleaching building with a basement for storage. The new building will contain about 30,000 sq. ft. Equipment now in use elsewhere will be moved into this new building. Completion is expected in about six months.

Cone Mills, Inc., Greensboro, has appointed Dan McConnell of its own organization as chief engineer for a projected new denim mill at San Marcos, Tex. Named as consulting engineers are Lockwood Greene Engineers, Inc., Spartanburg, S. C., and Frank T. Drought, San Antonio, Tex. Cost is about $8,000,000.

Dixiana Mills, Inc., Dillon, S. C., plans to have its new mill, now under construction, in production in September. The new building will total about 118,000 sq. ft. of floor space.

Ely & Walker Co., Greenville, S. C., is expanding its cotton-warehousing facilities to permit centralized purchasing of cotton for various mills that it controls.

Georgia Rug Mills, Summerville, Ga., a division of Bigelow-Sanford Carpet Co., is completing plans for a new one-story addition that will contain about 30,000 sq. ft. of floor space. The addition will be used as a warehouse. Improvements will also be made in the power facilities at the mill. James S. Wise, Atlanta, Ga., is the architect.

Heirloom Carpet Mills, Inc., Chickamauga, Ga., organized recently, has begun the production of cotton carpeting at its new mill. The building contains about 20,000 sq. ft. of floor space.

Hill Spinning Co., Roseboro, N. C., has been purchased by C. L. Little, president and treasurer of Little Cotton Mfg. Co., Wadesboro, N. C. The plant will be known as Roseboro Spinning Mills. The plant's 6,000 spinning spindles are being changed to long draft.

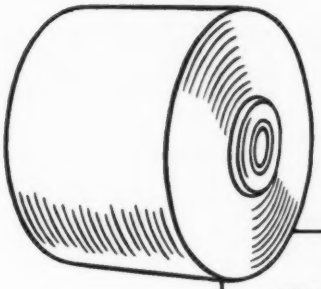
Jackson Mills, Wellford, S. C., is completing its $500,000 expansion program begun last year. The firm has added 70 Draper looms and 4,000 spindles.

Joanna Mills, Joanna, S. C., is expanding its combing facilities with the installation of Saco-Lowell combers and Fitex drawing.

Joanna Western Mills, Chicago, Ill., is building a new two-story-and-basement mill, 115x205 ft. C. W. Haynes

LARGE PACKAGES HAVE ADVANTAGES

in the steps which FOLLOW THE SPINNING

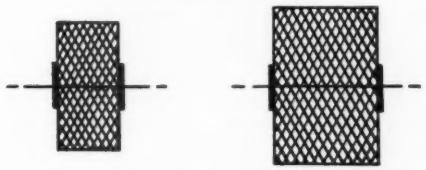


SPINNING

12" Bobbin — 3" Ring — 12 oz. Bobbin
= 1.33 Bob/lb. — 15,000 Yds.
9" Bobbin — 2" Ring — 3.85 oz. Bobbin
= 4.16 Bob/lb. — 5,000 Yds.

3 TIMES As Much Yardage On Bobbin

SPOOLING

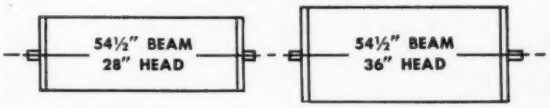


TYPE "C" CHEESE	TYPE "D" CHEESE
2.38 LBS.	6.00 LBS.
48,000 YDS.	120,000 YDS.

2.5 TIMES

AS MUCH YARDAGE PER CHEESE

WARPING



28" BEAM	36" BEAM	40" BEAM
530 LBS.	875 LBS.	1,050 LBS.
24,000 YDS.	40,000 YDS.	40,000 YDS.
445 ENDS	441 ENDS	529 ENDS
BEAMS PER CHEESE	BEAMS PER CHEESE	BEAMS PER CHEESE
TYPE "C"-2	TYPE "C"-1	TYPE "C"-1
TYPE "D"-5	TYPE "D"-3	TYPE "D"-3

SLASHING

Assuming 1,200 yds. per Loom Beam

28" BEAM	36" BEAM	40" BEAM
20 Loom Beams Per Set	33 Loom Beams Per Set	**39** Loom Beams Per Set
Average Slasher Creelings per 120-hr. Week		
5.68	3.67	**3.16**

TWISTING

2.38 LB. CHEESE	6.00 LB. CHEESE
48,000 YDS. PER CHEESE	120,000 YDS. PER CHEESE

2.5 TIMES
AS MANY BOBBINS CAN BE TWISTED
PER CREELING

Note: 24s Yarn Assumed in All Comparisons

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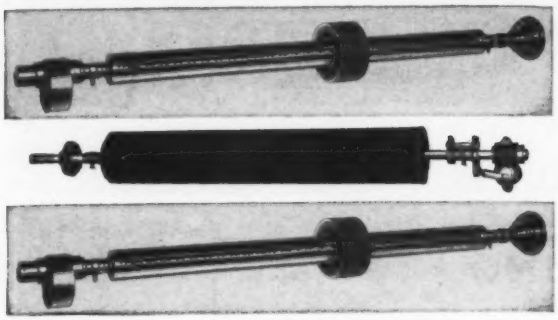

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News About MILLS (Continued)

Co., Chicago, is the general contractor. Cost is over $1,000,000. Vern E. Alden Co., Chicago, is the engineer.

Mooresville Mills, Plant No. 1, Mooresville, N. C., has been purchased by Carroll Beatty and John Amborn. Combed cotton shirtings will be made on 60 C&K looms.

Riegel Textile Corp., Trion, Ga., plans to build a new mill at Brundidge, Ala., which is reported to cost about $500,000, including equipment. Carl H. Lancaster, Montgomery, Ala., is the architect. New Monfort nappers have been installed in the plants at Trion and Ware Shoals, S. C.

Woodside Mills, Greenville, S. C., plans to expand and modernize its two plants at Liberty, S. C., at a cost of $300,000. At Liberty No. 1, 200 new Draper X-2 looms will be installed. At Liberty No. 2, a 100x100-ft. addition will be built, and four new Saco-Lowell combers will be installed.

WOOLEN AND WORSTED MILLS

Albany Felt Co., Albany, N. Y., has installed a new 650-in. Crompton & Knowles loom in its mill.

Berkshire Woolen Co., Pittsfield, Mass., is spending $75,000 on a plant addition to its division in Pittsfield.

Fieldcrest Mills, Inc., Karastan Mills, Spray, N. C., has ordered two additional Clark looms to be built by Crompton & Knowles for delivery next spring. A new scouring unit will be installed this month. Building alterations and revamping of the boiler room are now under way.

National Spinning Co., Inc., has opened its new spinning mill at Washington, N. C. Equipment includes Warner & Swasey pin drafters, Saco-Lowell roving frames, Saco-Lowell spinning frames, and Whitin twisters.

Nye-Wait Co., Auburn, N. Y., is installing additional equipment at its mill. A new 18-ft. loom for chenille production will be included in the installation.

Packard Mills, Inc., Dudley, Mass., has awarded the contract for a new $150,000 weave shed to R. H. White Construction Co., Auburn, Mass. Charles T. Main, Inc., Boston, Mass., is the architect-engineer.

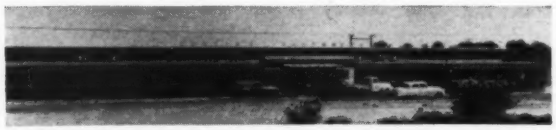
Premium Spinning Mills, Mooresville, N. C., has been organized and plans to construct a 125,000-sq.-ft. mill for woolen-yarn spinning. Officers include Mark Leopold, Mac Bier, and R. A. Virgil of Eastern Yarn Mills, Brooklyn, N. Y.

SYNTHETICS MILLS

Excelsior Mill, Mill No. 2, Clemson, S. C., has awarded the contract at $87,453 to Daniel Construction Co., Greenville, S. C., for the construction of a warehouse addition that will increase present facilities. Deering, Milliken Service Corp., Spartanburg, S. C., is the engineer.

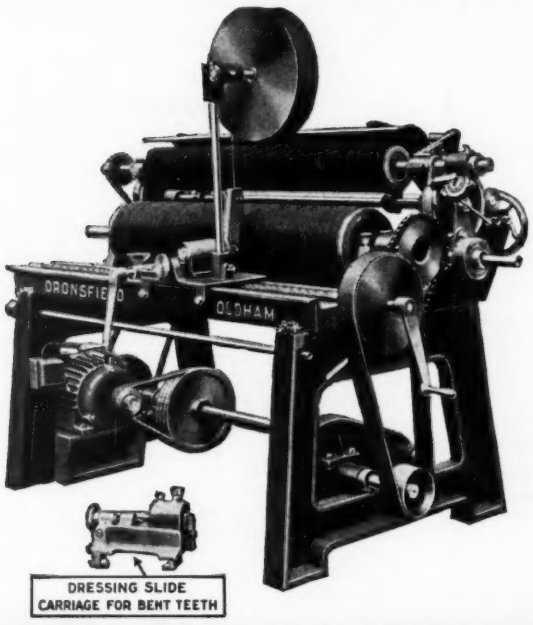
Judson Mills, Greenville, S. C., has installed a Schlafhorst quiller.

Starr Mills, Starr, S. C., has reached full production in its new mill. The new mill measures 268x151 ft. Daniel Construction Co., Greenville, was the contractor.



WILLIAM CARTER CO. has begun production in this new plant at Senatobia, Miss. Nylon-tricot lingerie and infants' and children's wear will be produced in this 53,000-sq. ft. plant.

Licker-In Roller Grinding, Dressing, Recovering & Burnishing Machine No. 163



DRESSING SLIDE CARRIAGE FOR BENT TEETH

for maintenance of taker-in rollers for grinding, dressing, recovering and burnishing.

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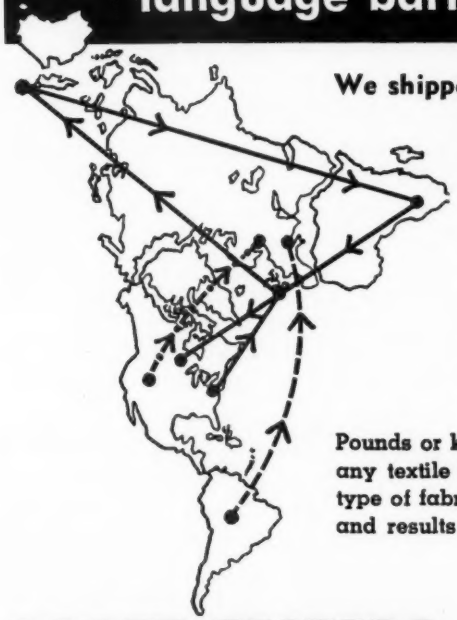

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News About MILLS (Continued)

Synthro, Inc., Bath, Pa., has leased the plant formerly occupied by Heller Hardt Co. and will install throwing machinery in its 18,000 sq. ft. of space. Jerome Barney, formerly vice president of Laros Textile Co., is president.

KNITTING MILLS

Alden Mills, New Orleans, La., is planning to construct a new hosiery mill at Independence, La.

Avonshire-Pratt Ltd., Inc., Philadelphia, Pa., has been incorporated for $10,000. It is a new operation of Avonshire Knitwear, Inc., 424 N. 13th St., of which L. G. Pratt, Jr., is president. The new firm will manufacture and sell knit goods.

Barberry Mills, Inc., Laconia, N. H., is now operating in its new building erected by the Laconia Industrial Development Corp. Sweaters and related knit goods are being produced.

Berkshire Knitting Mills, Reading, Pa., has purchased 52 30-section Reading full-fashioned knitting machines of 60 and 66 gauge from Apex Hosiery Mills, Philadelphia. Berkshire will distribute these machines among its plants at Reading, Pa.; Andrews, N. C.; Northern Ireland; and South Africa.

William Carter Co., Barnesville, Ga., will build a new one-story knitting plant, 100x 200 ft. and a two-story-and-basement bleach house, 150x 112 ft. A second story will be built on the present warehouse for additional cutting and sewing equipment.

Chipman Mills, Easton, Pa., has purchased several 75-gauge full-fashioned-hosiery knitting machines from Karl Lieberknecht, Inc., Reading, Pa.

Cooper's, Inc., Kenosha, Wis., plans to establish a storage and distribution unit at Cedartown, Ga.

Fitzgerald Underwear Corp. has been formed at Fitzgerald, Ga., by a New York firm. Plant construction is under way for a building that will contain 20,000 sq. ft. that the firm will lease. About 75 will be employed at the start of operations.

Glen Raven Knitting Mills, Inc., Glen Raven, N. C., has installed a complete throwing unit for its tricot mill. It includes new Atwood twisters and six Unirail uptwisters from Universal Winding Co.

John H. Guenther Hosiery Co., Reading, Pa., has been organized as a partnership by George C. and John H. Guenther, Jr. Plants will be operated in West Lawn and Birdsboro, Pa.

Hanes Hosiery Mills Co., Winston-Salem, N. C., has been licensed to make the Kay Schafler stay-up-welt seamless stockings.

Holeproof Hosiery Co., Milwaukee, Wis., will continue its hosiery-finishing operations at Milwaukee but has discontinued all knitting operations there. The knitting operations have been transferred to other plants of the company.

C. Walker Jones Co., East Germantown, Pa., has changed its name to Jomac, Inc. Terry-type knitted cotton fabric will be produced.

Joy Hosiery Co., Concord, N. C., has begun production of seamless hosiery for women on 44 Scott & Williams machines. J. P. Reeder is president of the new company; Nelson C. Sikes is vice president; and W. W. Flowe, Jr., secretary and treasurer. Mr. Sikes will be in charge of the plant. The company has an authorized capital of $100,000.

Knit Fabrics Co., Medford, Pa., has installed 10 Fidelity multi-ribbers.

Liberty Knitting Mills, Philadelphia, Pa., manufacturers of women's sweaters, has increased production by 50% in its new quarters at 426 Allegheny Ave. The new plant occupies 22,000 sq. ft. of space on one floor.

Lottie Belle Hosiery Mills, Inc., Charlotte, N. C., has

News About **MILLS** (Continued)

been incorporated by M. A. Weinstein, attorney. The company has 1,000 shares, no par value.

Monticello Knitting Mills, Inc., Jefferson, S. C., recently chartered with a capital of $100,000, is said to be planning early operation of its local mill. Cary C. Boshamer is president.

Pasquotank Hosiery Mills, Inc., Elizabeth City, N. C., was recently incorporated with an authorized capital of $200,000. Principals are Lizzie H. Eves, O. L. Rector, and M. M. Scott, all of Elizabeth City.

Seneca Knitting Mills Co., Inc., Seneca Falls, N. Y., has been bought by a group of local industrialists headed by Edwin A. Sealy, C. J. Mackle, and Francis J. and George G. Souhan.

Shelby Knitting, Philadelphia, Pa., which opened at 2222 N. 9th St., a month ago, has leased 3,000 additional feet in the same building for storage purposes. John Ashe is president. A new TAI machine and a new TJ-12 knitting machine are being installed.

Strutwear, Inc., Clarksdale, Miss., plans an expansion of its local plant.

Win-Ann Mfg. Co., Monroe, N. C., has leased space in the General Knitting Mills building in Monroe for the production of men's and boys' briefs and T-shirts. It is a branch of Win-Ann Mfg. Corp., Schuylkill Haven, Pa.

DYEING AND FINISHING PLANTS

Brookfield Mills, Inc., East Brookfield, Mass., an affiliate of Holliston Mills, will transfer local operations to its plant in East Taunton.

Dartmouth Finishing Co., New Bedford, Mass., will add modern fabric-dyeing machines and more printing equipment when floor space is available.

Paramount Printing & Finishing Co., Pawtucket, R. I., has installed continuous-roll feed scrays with cloth straightening equipment. Equipment was installed by Mount Hope Textile Machinery Co., Taunton, Mass.

United Piece Dye Works, Lodi, N. J., is expanding its operations at Charleston, S. C. Three printing machines and auxiliary equipment will be added there. Milton K. Emerson, a company vice president, is in charge at Charleston.

MISCELLANEOUS MILLS

Ware Cotton Batting Co., Inc., New Orleans, La., has begun construction of a one-story addition to its mill that will cost about $50,000. The contract has been let to E. B. Ludwig, Inc., New Orleans. The new addition will be used for warehouse service.

West New York Lace & Embroidery Mfg. Co., 5528 Bergenline Ave., West New York, N. J., has been incorporated by a group headed by Max Boorstein.

FOREIGN MILLS

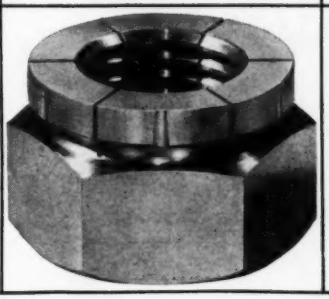
Goldberger Textile Mills, Vienna, Austria, has adopted a method of continuous bleaching worked out by the local Textile Industry Research Institute.

Kanegafuchi Co., Yodogawa Plant, Osaka, Japan, has installed five sets of equipment for Sanforized-process shrinking, a continuous bleacher, continuous dyer, and continuous drying equipment.

Cyril Lord Ltd., London, England, is said to be negotiating with the Northern Ireland Government for the erection of a plant there to apply a patented finish to synthetic-fiber fabrics.

Prosperity Textiles Ltd. has been established at Hong Kong with a nominal capital of HK-$2,000,000 to engage in spinning and weaving of silk, rayon, and cotton. Prosperity's registered office is at Room No. 310, Hong Kong Hotel Building, Hong Kong.

they won't work loose



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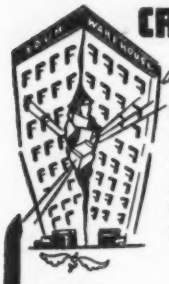

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NEWS ABOUT Men

William A. Atlinson has been named overseer of weaving at Rock River Woolen Mills, Janesville, Wis.

Henry J. Bell has been elected a vice president of Fruit of the Loom, Inc., Pontiac, R. I. **B. Earle Appleton, R. H. Ives Goddard, Weston Howland, John W. Poulson, Arthur D. Pinkham, Carleton R. Richard,** and **S. Bruce Smart** have been elected to the board.

Allen Bentley has been elected vice president of Swift Mfg. Co., Columbus, Ga.

James Bolton has resigned as president of Gosnold Mills Corp., New Bedford, Mass. He has also resigned as a director of Powdrell & Alexander, Danielson, Conn.

J. W. Bowers, W. C. Fry, Dorothy Lowell, O. K. Peterson, R. E. Douglas, J. W. Perry, Carl Keen, W. D. Gilbert, and **M. E. Rush** have been elected to the board of directors of Harrisburg Woolen Co., Harrisburg, Ore.

J. C. Boyce has been named general manager of Morgan Mill, Laurinburg, N. C.

Henry M. Brabham has been named superintendent of Alma Mills, Gaffney, S. C., in addition to his duties as superintendent of Musgrove Mills, Gaffney.

Alfred Bradstreet has been promoted to overseer of weaving at the Raleigh Mill of American Woolen Co., Raleigh, N. C.

G. A. Brown has been named to head the newly formed Automotive Fabrics Div. of J. P. Stevens & Co., Inc., Detroit, Mich.

William Cain has been named overseer of blending at Stanley Woolen Co., Uxbridge, Mass.

J. Harvey Cleveland has been appointed overseer of carding of Woodside Mills, Greenville, S. C., succeeding **B. T. Mulligan,** retired. **Luther Harrison** has been appointed overseer of the cloth room, succeeding **A. H. Pollard,** retired.

James Cohen has been appointed assistant vice president of Malden Knitting Mills, Inc., Malden, Mass.

Ray Connors has been named overseer of carding at Swift River Woolen Co., Stafford, Conn. **George Lawrence** has been named agent.

C. Herbert Davison has been elected chairman of the board of Hightstown Rug Co., Hightstown, N. J. **Hugh W. Logan** was elected president.

William De Mers has succeeded **George Aldrich** as overseer of dyeing at Botany Mills, Passaic, N. J.

Eugene H. Denoyelle has been named general foreman at Amory Worsted Mills, Inc., Mill No. 11, Manchester, N. H.

Joseph T. Duffy has been named overseer of finishing at Wyandotte Worsted Co., Pittsfield, Mass., succeeding **Herbert Fulton.**

K. H. Dunlap and **W. E. Levan** have been elected to the board of Kenwood Mills Ltd., Arnprior, Ont.

William R. Edwards has resigned as manager of the woolen and worsted division of Pacific Mills, Lawrence, Mass.

Milton K. Emerson, vice president, has been named general manager of United Piece Dye Works plant at Charleston, S. C. He succeeds **Peyton Beery,** resigned.

Carlisle W. Evans, Jr., has been named superintendent of Burlington Mills Corp.'s new plant at Scottsboro, Ala.

C. E. Field has been named overseer of the warping de-

News About **MEN** (Continued)

partment at Crown Woolen Mills Corp., Marcellus, N. Y.

Clarence Fisher has been appointed superintendent of Jonesville Cotton Mill, Jonesville, S. C. **P. W. Nipper, Jr.,** has been named superintendent of the Piedmont Mfg. Co., Piedmont, S. C.

Harold Forss has been named overseer of finishing at Collins & Aikman Corp., Bristol, R. I.

A. L. Fort has retired as head of the cotton department of Avondale Mills, Sylacauga, Ala.

Ted Friedlander, Jr., Joseph F. LeSac, and **A. Foster Sheller** have been elected vice presidents of Phoenix Hosiery Co., Milwaukee, Wis.

Woodrow W. Garrett has been promoted to general overseer of the carding department of the No. 3 plant of Republic Cotton Mills, Great Falls, S. C. He succeeds **Hazel Williams.**

Herbert Gates has been named manager of the Monarch Knitting Co. Ltd. unit at Dunville, Ont.

Alfred H. Grant has succeeded **W. O. Saunders** as executive vice president of Robbins Mills, Inc., New York, N. Y. **Karl Robbins,** chairman, **Mr. Saunders, Murray Kramer,** and **T. Edmund Beck** have resigned from the board. Mr. **Kramer** will remain as sales manager of the flat-goods division.

N. A. Gregory and **L. C. Thomas** have been promoted to vice presidents of Erwin Mills, Durham, N. C. **E. W. Dunham,** secretary, has assumed the additional responsibility of assistant treasurer, and **Fulton O. Smith** has been named manager of the accounting department.

B. G. Gunn has been named a vice president of Penman's Ltd., Montreal, Que. He will continue as general manager.

W. Hair has retired as overseer of dyeing at Amos Abbott Co., Dexter, Me. **Ralph Stone,** his assistant, has assumed his position temporarily.

John W. Hanes, E. A. Morris, and **R. F. Brooks** have been elected to the board of P. H. Hanes Knitting Co., Winston-Salem, N. C.

R. C. Haseltine has been named overseer of carding at Union Wadding Co., Pawtucket, R. I.

Benjamin Heinerfeld has been elected to the newly created position of executive vice president of Julius Kayser & Co., New York, N. Y. **A. Phillip Goldsmith** has been elected chairman of the executive committee.

Henry Hoyle has been named technical consultant at Jantzen Knitting Mills, Portland, Ore. **O. Adrian** has succeeded Mr. Hoyle as superintendent.

Malcolm G. Jones, L. R. Shaws, C. E. Brown, Harry Horrocks, and **Robert O. Huffman** have been elected to the board of American Thread Co., New York, N. Y.

L. E. COX (left) has been named manager of the Kansas City, Mo., plant and sales division of Bemis Bro. Bag Co. He succeeds HOWARD L. BAYNE (right), retired.

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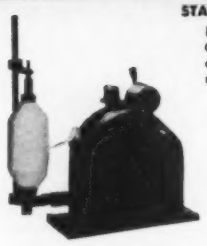

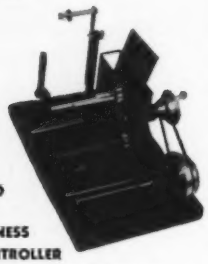

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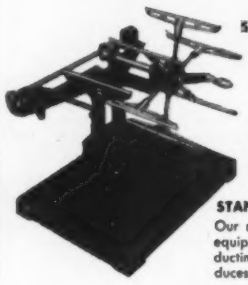

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News About MEN (Continued)

WILLIAM A. CORRY has joined the research and development staff of the Landers Corp., Toledo, Ohio.

George Kenyon has been named superintendent at the Hohokus Bleachery, Hohokus, N. J. **George Piggott** has been named overseer of finishing.

E. A. Lebeau has been named general overseer of carding at Atlantic Wool Combing Co., Manville, R. I.

Maurice Levin has been elected chairman of the board of Columbia Mills, Inc., New York, N. Y. **Edward F. O'Reilly** has been elected president; **H. E. Wilkins**, vice president in charge of production; **F. J. Sliney**, vice president in charge of sales; **R. A. Harper**, vice president, fabrics and finishes; **James A. Reynolds**, secretary; **E. L. Sager**, treasurer and comptroller.

Thomas F. Lucas has been named general manager of all operations of Associated Textiles of Canada Ltd., Louisville, Que.

Robert W. McCullough has been appointed assistant to the president of Collins & Aikman Corp., New York, N. Y. **W. Roland Keen** will succeed him as director of manufacturing.

Arthur C. McEwen has been elected executive vice president of the North Star Woolen Co., Lima, Ohio.

R. K. McMillan has been named overseer of spinning at Clearbrook Woolen Co., Inc., Clearbrook, Va.

George V. Meehan has been elected president of Powdrell & Alexander, Inc., Danielson, Conn. He succeeds **George H. Jackson**, who has been elected vice president.

H. E. Meinelt has resigned as overseer of dyeing at Fred Whitaker Co., Philadelphia, Pa.

J. Frank Morrissey has been elected vice president of Interlaken Mills, West Warwick, R. I. He will continue as treasurer and managing director.

J. B. Olstein and **Leonard Levy** have been elected to the board of A. D. Juilliard & Co., New York, N. Y. **Adolph Bleiman** and **Harold Ackerman** have been elected vice presidents, and **L. L. Smith** has been named treasurer.

Felix Poire has been named overseer in the weaving department of Hargo Woolen Mill, New Bedford, Mass.

S. S. Rogers has been named assistant superintendent at the Marland Mills of M. T. Stevens & Sons Co., Andover, Mass.

Jack Schaffer has resigned as vice president of Craft Knitting Mills, Brooklyn, N. Y.

Robert D. Scheirer, Jr., has been named head of the Industrial Engineering Dept. at C. H. Masland & Sons, Carlisle, Pa. **Paul Meredith** has been promoted to foreman of the Velvet Weave Dept.

Robert O. Simpson has been named manager of the Nashville, Tenn., office of Cone Mills, Inc.

Prof. John H. Skinkle has been appointed executive director of the Lowell Technological Institute Research Foundation, Lowell, Mass.

Charles S. Smart, Jr., has been named head of the newly created central department of the cotton-mill operations for M. Lowenstein & Sons, Anderson, S. C.

W. J. Spiers has been elected vice president and general manager of Valley Mills, Columbiana, Ala.

C. A. Thornhill has been named overseer of dyeing at

News About MEN (Continued)

Sutton's Mills, North Andover, Mass.

Frank H. Tinney, Jr., has been named chief industrial engineer of the Fabric Production Div. of United Merchants & Mfrs., Inc., Greenville, S. C.

Arthur Tousignant has been promoted from general manager to vice president of Spofford Mills, Inc., Wilmington, N. C.

Barnard Townsend has been appointed financial vice president and treasurer of Mohawk Carpet Mills, Inc., Amsterdam, N. Y.

Edward Usry has been named assistant superintendent of Union Bleachery, Greenville, S. C.

Thomas Warren has been named boss spinner at Troy Yarn Mills, Inc., West Sand Lake, N. Y.

G. L. Westcott has retired as treasurer of Cabin Crafts, Inc., Dalton, Ga. He will continue as a director and a member of the board's executive committee.

James Wilson has been promoted to vice president and general manager of Forstmann Woolen Co., Passaic, N. J.

Ralph Wirth has been elected president and manager of Reedsburg Woolen Mills, Reedsburg, Wis.

Everett G. Wood has been named vice president of Cotton Threads Ltd., Montreal, Que.

OBITUARY

Edward F. Addiss, 61, vice president, treasurer, and a director of A. D. Juilliard & Co., New York, N. Y.

Emmanuel Baere, 82, secretary-treasurer of Peerless Fiber Co., Cohoes, N. Y.

Dr. Ernest B. Benger, 68, director of E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.

John R. Dodson, 85, retired vice president and treasurer of Jantzen, Inc., Portland, Ore.

Clinton E. Drum, 49, general superintendent of the finishing department of Whenball Hosiery Mill, Newton, N. C.

Henry G. Holbrook, 65, assistant treasurer of The Kendall Co., Boston, Mass.

Lawrence P. Holland, 87, secretary of Lily Mills Co., Shelby, N. C.

Edwin Howard, 85, retired Southern sales manager for Veeder-Root, Inc., Greenville, S. C. He had remained with the company as a consultant.

William E. Jones, 60, retired vice president of Scranton Lace Co., Scranton, Pa.

C. Donald Makespeace, 48, director of research and development at Robinson Thread Co., Worcester, Mass.

Lloyd D. McDonald, 60, executive vice president of Warner & Swasey Co., Cleveland, Ohio.

Ben Oldfield, 76, retired superintendent of the Ayer Mills of American Woolen Co., Lawrence, Mass.

Nathan Rosenblatt, a partner in Highland Knitting Mills, Philadelphia, Pa.

Maurice D. Rothschild, 58, secretary-treasurer of David Rothschild Co., Columbus, Ga.

Leroy H. Smith, 56, manager of American Viscose Corp., Roanoke, Va.

William E. Spencer, 63, superintendent of carding and spinning at Gilbert Knitting Co., Little Falls, N. Y.

Walter A. Spicer, 52, a vice president of the former Sanford Mills, Inc., Sanford, Me.

Chester E. Williams, 69, president of Johnson & Bassett, Inc., Worcester, Mass.

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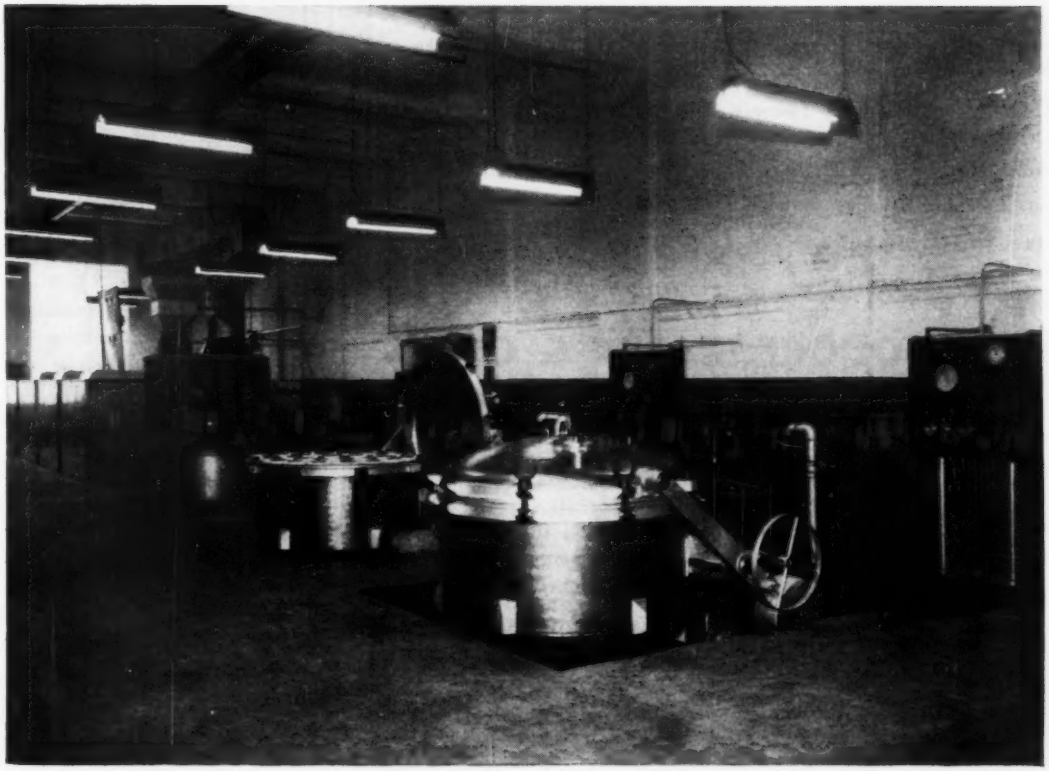

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1—V. V. 48" Decatizer, Pump Motors & Blanket—$1500.00
2—8' S. S. Dye Becks—$600.00 each
1—48" Eliot-Hall Flat Folder—$250.00
1—V. V. Tenter Frame—30' x 62"—S. S. Clips—$1650.00
3—Beamers—76"—55"—50"—$125.00 each
1—68" Progressive Hyspeed Exam. Measuring Machine with reverse—$500.00
1—60" Extractor—$600.00
1—V. V. 50" Scutcher—$650.00
1—V. V. 64" Palmer, Quetch & Blanket—$2000.00
3—Textile Squeeze Sets, 96" wide, 2 Rubber Rolls 19" & 12" Diam. roller bearings
1—W & J 60" x 60' Tenter Frame S. S. Clips, Electric Guides $1500.00
2—W & J 50" x 60' Tenter Frames S. S. Clips, Electric Guides $1250.00 ea.

A & M BLANK CO., INC.

301-313 East 22nd St. (at 7th Ave.) Paterson, N.J.
SHerwood 2-1367-8

PREPARATORY

1—Hunter 60"x20", 2 cyl. Garnett
2—P. & S. 48" Picker Feeds, 1950
8—Harwood, Sargeant 42"—54" Picker Feeds
2—P. & S. 60" Garnett Feeds
1—Whitin E-3 Card Feed, 60"
5—D. & F. & Sargeant 6, 8 Bar Mixing Pickers
2—48" D. & F. Fearnought Pickers
6—18"—24" Shoddy or Waste Pickers
2—36"—48" Burr-Pickers
1—Schofield 48" Automatic Duster
1—P. & S. Mod. 523 Duster
1—Woonsocker 36"x36" Ceiling Condenser

WINDING & WARPING

3—Foster 102 Cone Winders 100 sp. Universal 50's & 90's rebuilt
1—Foster Mod. 12 Skein Winder
1—Reiner 600 End Mag. Cone Creel
4—D. & F. Pin or Pinless Warper

FINISHING

1—Butterworth 80", 3 Roll 80 ton Calendar
1—Hunter 72" Squeeze Roll Set, Mod. G
1—Gessner 72"x36" Semi-Decater, 1948
2—Voelker 66" D.B. Presses
1—Set (6) Copper Dry Cans, 70"x36"
1—Wetting-Out Tank, S/S Lined, 62"
1—P. & W. 72" Steam Luster Machine
1—Crab, 3 bowl, 72" Yorkshire Type
2—Birch Doub. & Tack. Mach., 92"
2—Teasel Gigs, Doub. Cyl., 60"
1—P. & W. Cloth Doubler, 66"
1—Roy 84" Napper Grinder

MISCELLANEOUS

8—Stock Blowers 30"—40"
4—Macbeth Color Matching Lamps
1—P. & S. Cyclone Dust Collector, 1949
2—Parks-Cramer Oiling Devices & Pumps
1—Singer Overlocker, Mtr., & Table
1—Mt. Hope 72" Rubber Spreader Roll

FRANK W. WHEELER CO.

1837 E. Ruan St. Phones: Jefferson 5-4771 4772 Philadelphia 24, Pa.
Reputable Dealers for over a quarter of a century

LATEST WIDE TRICOT FINISHING EQUIPMENT

New -- In Original Crates

* Birch Bros. Tacking Machine
* Birch Bros. Cloth opener and Vacuum extractor
  Birch Bros. De-Tacking Machine
* Winsor & Jerauld Pin Tenter (with folder and winder)
  Dalglish Overfeed and uncurling device
  Proctor and Schwartz Cloth dryer
  Proctor and Schwartz Heat Setting Machine
* Birch Bros. Doubler and folder

COLGATE PIECE DYE WORKS

171 Goffle Road Hawthorne, N. J.

*Items grouped together operate as one unit

What is Your Need?

Do you need competent men for your staff? Men experienced in the Textile industry. Men to fill executive, sales or technical positions?

Or are you looking for—or offering—a business opportunity of special interest to men in the industry served by this publication?

Or are you seeking buyers for surplus used equipment, or want to buy such equipment?

The solution of any of these needs can logically be found first among other readers of Textile World. You can get their attention, at small cost through an advertisement in this "SEARCHLIGHT" Section of TEXTILE WORLD.

•

RATES

UNDISPLAYED RATE:

$1.20 cents per line, minimum—3 lines. To figure advanced payment count 5 average words as a line.

POSITION WANTED undisplayed advertising rate is one-half of above rate, payable in advance.

BOX NUMBERS care of publication count as 1 line additional in undisplayed ads.

DISPLAYED RATE:

The advertising rate is $12.65 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

AN ADVERTISING INCH is measured ⅞ inch vertically on one column. 3 columns — 30 inches — to a page.

EQUIPMENT WANTED OR FOR SALE Advertisements acceptable only in Displayed Style.

SEND NEW ADVERTISEMENTS to N. Y. Office, 330 W. 42nd St., N. Y. 36, N. Y.

September issue closing August 13th

IN STOCK
STAINLESS STEEL TANKS
STORAGE & MIXING

1—6000 gal. Vertical—used
1—5700 gal. Horiz. T304—unused
2—5000 gal. Vertical—used
1—3000 gal. Vertical—unused
1—3000 gal. Horizontal—used
20—from 15 gal. to 1000 gal. sizes
15—Stainless Steel Jacketed Kettles, some with agitators.

PERRY EQUIPMENT CORP.
1430 N. Sixth Street Philadelphia 22, Pa.

BUHLMANN DYEING MACHINE

62 arm, twin type hydraulic, 15 units, complete with motor. Perfect condition.

SLASHER

1—5 can Johnson 23" dia., 66" face, with quetch, size pan, beam take-up, motor driven. Operated by steam pressure. Excellent condition.

BOILER

One 10 H.P. Boiler, 15 lb./sq. in., natural gas fired.

UNIVERSAL

High Speed Creel, 700 hundred double ends for both Cones & Pirns.

FS-3309, Textile World
330 W. 42 St., New York 36, N. Y.

FOR SALE
1 D&F 72 x 60 Wool Card
1 D&F 60 x 60 Wool Card
3 D&F 120 Spld 6½Gx5R Spinning Frames
PHILIP WHITEHEAD
533 Main Street, Melrose, Mass.
Phone Me-4-4980

WEBBING

Large quantity for sale. 1¼" x 72" White, Govt. surplus Machine Gun Belting.
JEFF LEE
40 Park Place Newark 2, N. J.

FOR SALE
DIE CAST STEEL SECTIONAL SPOOLS
Length between flanges: 14" and 14½". Bore for 2 11/16" keyed shaft. Flange O.D. 13¾". Core 4".
LIBERTY TEXTILE CORPORATION
35 S. Van Brunt Str. Englewood, N. J.
Tel. Lowell 7-1225

New "SEARCHLIGHT" Advertisements
received by August 13th will appear in the September issue subject to limitations of space available.
Classified Advertising Division
TEXTILE WORLD
330 West 42nd St. New York 36, N. Y.

REBUILT MACHINERY FOR IMMEDIATE DELIVERY

1—Parks & Woolson 72" Decatizer, Nash Pump & Motor
1—Butterworth Clip Tenter 40' x 72" Reeves & Motor
1—W & J Tenter Frame 30' x 54"
1—W & J Tenter Frame 30' x 96"
2—V. V. 3 Roll Silk Calenders M. D.
1—Hercules 48" Self Balancing Extractor open top side mounted Motor
1—V. V. 42" Self Balancing Extractor M. D.
1—Set of 21 Dry Cans 72" x 23"
1—54" Verduin Hydraulic Embosser
1—Johnson 7 Can Slasher
2—Van Vlaanderen Tubers 64"
3—Paterson Tubers 64"
2—Paterson Beamers 60"
1—Hinnekens 60" Variable Speed Tubing & Examining Machine
1—Measuregraph 72" Variable Speed Tubing & Examining Machine
1—Hermas Measuring & Inspection Machine 58"
2—60 gal. copper Jacketed Kettles, with Agitators M. D.
1—Elliot & Hall Flat Folder 54"
Motors & Drives of Various sizes

1—4 COLOR TEXTILE PRINT MACHINE 68"
1—2 COLOR TEXTILE MACHINE 68"
1—72" PNEUMATIC PADDER, 2 NEW RUBBER ROLLS
1—54" HINNEKENS BOIL-OFF MACHINE

SHerwood 2-7666 SHerwood 2-7667
DOMESTIC Moe Blank EXPORT
TEXTILE DYEING & FINISHING MACHINERY MACHINERY
523-525 E. 18th ST. PATERSON 4, N. J.

LOOM SUPPLIES

137 Draper, model XD 1946, 68" cloth, dobby
80 Draper, model XD 1942, 46" dbl. fork cam
32 Draper, model E 40" cloth cam
50 Draper, model E 50" cloth with dobbies
59 Draper, model K 42" cloth with dobbies
24 C&K model S-6 1951 72" b-swords
32 C&K model S-5 56" b/swords 2 x 1
100 C&K model W-3 76"
475 Draper X looms 40" & 44" cloth cam 220V
48 Draper XP looms, 60" cloth, 220V cam

Drawing-in frames, stafford thread cutters, lease rods, temples, friction let-offs, Roper let-offs, heddle frames, heddles, drop wires—all sizes—send sample, loom beams, weavers knotters, filling boxes, dobbies, cloth inspecting machines, whip rolls, brackets for 24" beams, midget feelers, etc.

1 Flax Plant, mach'y. on line & tow system
1 Twin wire heddle-making plant
1 Rayon Weaving Plant, complete, 288 looms
1 Cotton Spinning & Weav. plant, 572 looms
1 P&A Single Process Picker, 37"
2 S/L Single Process Pickers, 40"
4 H&B Drawing Frames, 5 delivery, 10" coil
28 H&B & T&S Cards (English) 37", 10" coilers
25 H&B American Cards, 40"
42 Whitin Tape Drives, 3¼" g. 240 sp. frames
2 H&B Twisters, 5½" g. 4½" ring, band drive
2 B/C #69 HW Warpers Hi-Speed
1 B/C Cheese Creel VC318 468 ends 1949
3 Universal Creels, 400 end cotton wool
1 Cocker 9 can 60" 1947 30" SS drum
1 Van Vl. 7 can slasher, 66" pelzin drive
1 100 sp. Abbott Winder, 7¾" bobbin 1951
4 12 sp. Schweiter Winders, 7½" bobbin 1949

MACHINERY SALES CORPORATION
New Bedford, Mass. P. O. Box 560, Phone 7-9466

OUR SPECIALTY IS
UNIVERSAL #50 WINDERS

Pineapple Cone
Emulsion
Attachments
Gear Gain
Others All Rebuilt and to Your Specifications

Guaranteed

N. Y. C. REPRESENTATIVES FOR UNIVERSAL WINDING CO.

Gaines
FOR BEST VALUES IN REBUILT TEXTILE MACHINERY
GAINES TEXTILE MACHINERY CO., INC.
141 WEST 17TH ST., NEW YORK 11, N. Y.

ALSO
1—40 Spindle Roto-Coner—1950
1—20 Spindle Roto-Coner—1952
List Your Surplus Equipment With Us

---

100 No. 50 Universal Coners—"L" Drive Gears Gainers-Pineapples

2—YARN CONDITIONING BOXES—1—H&W 1950—TYPE ST-2

5—*ATWOOD 10K REELERS*

3—*JOHNSON SLASHERS*

75—C&K S-5—56" LOOMS WITH LARGE S-6 CLUTCHES

21—Atwood D. D. Up-Twister 220 Sp.—½ Lb. Pkg.—Double Motor—Spooling

1—HERMAS INSPECTION FRAME—82" with 1950 TRIM MASTER

BOBBINS — SPOOLS — QUILLS — All Sizes & Types

PENNSYLVANIA SPOOL & EQUIPMENT CO.
530 N. FULTON ST. ALLENTOWN, PA. Phone 3-7545

To the Employee Relations Director of every American company

LET'S FACE IT . . . the threat of war and the atom bomb has become a real part of our life—and will be with us for years. Fires, tornadoes and other disasters, too, may strike without warning.

The very lives of your employees are at stake. Yours is a grave responsibility. Consider what may happen.

When the emergency comes, everybody's going to need help at the same time. It may be hours before outside aid reaches you. The best chance of survival for your workers—and the fastest way to get back into production—is to know what to do and be ready to do it. To be unprepared is to gamble with human lives. Disaster may happen TOMORROW. Insist that these simple precautions are taken TODAY:

☐ **Call your local** Civil Defense Director. He'll help you set up a plan for your offices and plant—a plan that's safer, because it's entirely integrated with community Civil Defense action.

☐ **Check contents** and locations of first-aid kits. Be sure they're adequate and up to date. Here again, your CD Director can help—with advice on supplies needed for injuries due to blast, radiation, etc.

☐ **Encourage personnel** to attend Red Cross First Aid Training Courses.

☐ **Encourage your staff** and your community to have their homes prepared. Run ads in your plant paper, in local newspapers, over TV and radio, on bulletin boards. Your CD Director can show you ads that you can sponsor locally. Set the standard of preparedness in your plant city. There's no better way of building prestige and good employee relations—and no greater way of helping America.

Act now . . . check off these four simple points . . . before it's too late.

Index to ADVERTISERS Keyed by PRODUCT

A HELP TO YOU. This unique TEXTILE WORLD index, particularly if consulted for two or more consecutive issues, affords a valuable source of information on the latest products and services available to the textile industry. Its comprehensiveness is the result of the fact that TEXTILE WORLD, having the largest circulation and highest readership of any textile-mill magazine in the world, carries the largest volume of advertising.

HOW TO USE. First, look in the table below and find the letter that designates the class of supply or service in which you are currently interested. Then consult in the index the page numbers that are followed by that letter.

A. Air Conditioning, Air Cleaning
B. Building Construction and Maintenance, Paints, Yard Equipment, Water Supply
C. Chemicals and Dyestuffs
D. Cleaning Equipment
E. Dyeing, Finishing, and Cloth Room Equipment and Supplies
F. Electrical Equipment—Motors, Controls, Lighting, Etc.
G. Fibers, Yarns, Mills, Finishing Companies
H. Fluid Handling—Compressors, Pumps, Piping, Valves, Fittings
K. Instruments: Measuring, Metering, and Weighing Apparatus.
L. Knitting-Mill Equipment and Supplies
M. Lubricants and Lubrication Equipment
N. Management Services—Factors, Consulting Engineers, Insurance, Personnel Facilities, Plant Sites, Etc.
O. Materials and components for Machinery and Equipment
P. Materials Handling, Packaging, and Shipping Facilities
Q. Power Generation and Transmission (see also Electrical Equipment)
R. Weaving and Warp Preparation Equipment and Supplies
T. Yarn-Production, Twisting and Winding Equipment and Supplies.

This index is published as a convenience to the reader. Great care is taken to make it accurate, but Textile World assumes no responsibility for errors or omissions.

Acrometal Products Inc.	213	T
Alemite Div., Stewart-Warner Corp.	102	M
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Borne, Scrymser Co.	167	C
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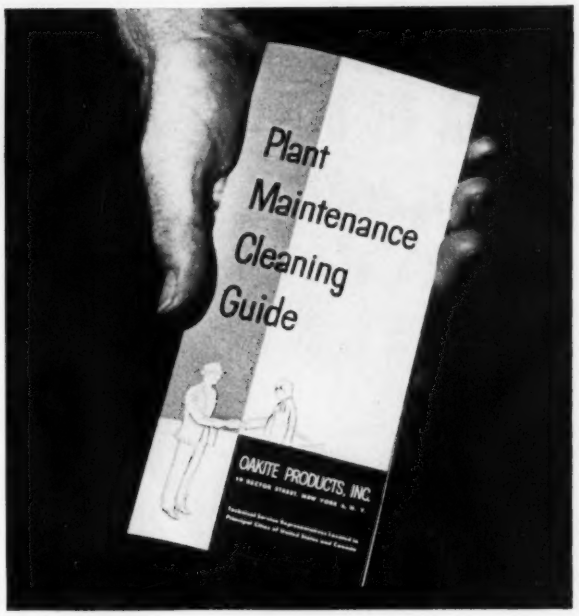
Celanese Corp. of America Chemical Div.	189	C
Century Electric Co.	48	F
Cities Service Oil Co.	125	M
Clark Equipment Co., Industrial Truck Div.	49	P
Clinton Foods Inc.	174	C



For you...

For better maintenance

Here's your copy! Sixty one plant maintenance cleaning ideas—and all designed to help you save time and money. If you feel you're not getting the maximum out of your maintenance cleaning budget, get a copy today and look it over. Here's a partial list of its contents:

- **General Plant Maintenance: cleaning equipment, machinery; descaling; derusting; laundering.**
- **Cleaning Before Electrical Repair: stripping armature coils; cleaning motors.**
- **Floor Cleaning: From terrazzo to wood.**
- **Cafeteria Maintenance: Washing utensils, trays, dishes; sanitizing and deodorizing.**
- **Air Conditioning, Humidifying, Refrigerator Maintenance: descaling systems; filter cleaning; cleaning coils; water treatment.**

There's much more. From skylight to cellar . . . it couldn't be more complete, or more valuable. Write for your copy today. It's FREE. Address: Oakite Products, Inc., 42 Rector Street, New York 6, N. Y.

SPECIALIZED INDUSTRIAL CLEANING

OAKITE

MATERIALS • METHODS • SERVICE

Technical Service Representatives in Principal Cities of U.S. & Canada

HEIM . . . .
Unibal SWEEP STICKS

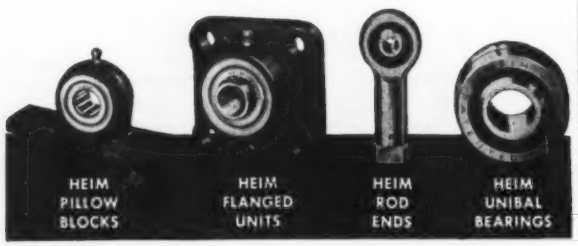
This Heim Unibal Spherical Bearing is assembled as an integral part of the sweepstick. It corrects any misalignment at the stud.

Looking at this cutaway view of the bearing, we see how the single ball oscillates in bronze bearing races to give longer life & smoother operation.

The body of the Heim sweepstick is made of heavy cotton fabric bonded in rubber. A long wearing, self aligning Unibal bearing protects the stick from wearing egg shaped at the stud. The result is smoother pick action and longer life.

Please write for list of sizes and prices — or a sample for testing if you would like.

THE HEIM COMPANY
FAIRFIELD, CONNECTICUT



Clipper Belt Lacer Co.	211	Q
Cole Mfg. Co., R. D.	180	B, E
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Colson Corp.	182	P
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Gardner-Denver Co.	40	H
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Jenkins Sons Inc., M. W.	137	E

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Keever Starch Co.	181	C
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Kidde & Co., Inc., Walter	203	RT
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Link-Belt Co.	7	Q
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Lowell Shuttle Co.	160	RT
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Micro Switch Div.	100	F
Milton Machine Wks., Inc.	184	R
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Moisture Register Co.	186	K
Monsanto Chemical Co. Inorganic Chem. Div.	129	C
Textile Chemicals Div.	33	C
Morton Salt Co.	159	C
National Aniline Div., Allied Chem. & Dye Corp.	17	C
Naugatuck Chemical Div., U. S. Rubber Co.	143	C
New Departure Div. of General Motors	15	O Q
Nopco Chemical Co.	9	C
Oakite Products, Inc.	225	C
Onyx Oil & Chemical Co.	52-53	C
Penick & Ford, Ltd.	178	C
Perfecting Service Co.	182	H
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Royce Chemical Co.	105	C
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Sandoz Chemical Wks	27	C
Schlafhorst & Co., W.	11	RT
Scott Testers, Inc.	209	K
Societe Alsacienne De Constructions Mecaniques	19	T

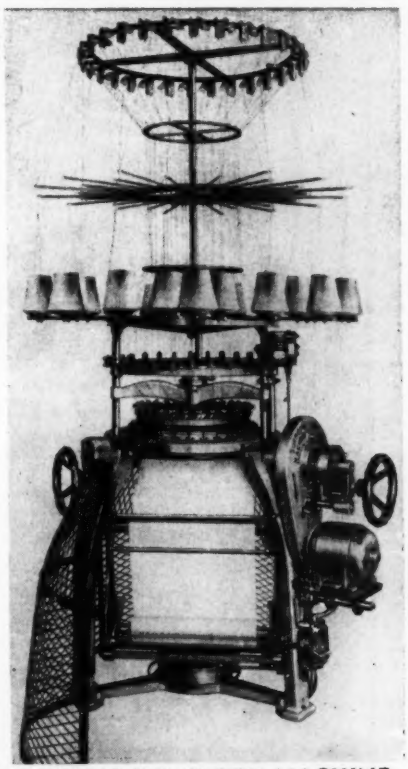
WESCO... tops 'em all...

ELECTRIC STOP-MOTIONS
FOR
UNDERWEAR • OUTERWEAR • HOSIERY

Look for "WESCO"

ON ALL THESE KNITTING MACHINES

Bentley
Blackburn
Brinton
Cooper
Crane
Edmos
Fidelity
Jacquard
Lamb
Leighton
Meller, Bromley
Ordnance
Scott & Williams
Stafford & Holt
Stibbe
Supreme
Tompkins Bros.
Wildman
Wildt



SUPREME RIB CLOTH MACHINE

Manufacturers and knitters all over the world buy and specify Wesco. They know from experience Wesco stop motions get the best out of the machines they build and buy.

Wesco is the "safety-first" word for Superior Knitting. When you purchase new knitting machine—Specify "Wesco" Electric Stopmotions.

STOP-MOTION DEVICES CORPORATION
1471-77 Fulton St. Brooklyn 16, N.Y.

Another of a Series of Knitting Machine Builders. Others to follow

MAUSER

INDUSTRIAL SEWING MACHINES

are Chainstitch and Overlock Machines of world-wide reputation, designed for latest requirements.

The MAUSER Program includes

- Overlock Machines
- Single Chainstitch Machines
- Double Chainstitch Machines
- Elastic inserting Machines
- Overseaming Machines
- Ornamental Seam Machines
- Bag Sewing Machines
- Cylinder Machines
- Double Feller Feed-off-the-arm Machines
- Flatlock Feed-off-the-arm Machines
- Ribbon Cutting Machines

Please inquire for special leaflets.

INDUSTRIE-WERKE KARLSRUHE
AKTIENGESELLSCHAFT KARLSRUHE, GERMANY

Socony-Vacuum Oil Co., Inc.	24	C
Solvay Process Div., Allied Chem. & Dye Corp.	195	C
Sonoco Products Co.	12	E T
Standard Mill Supply Co.	214	E
Standard Pressed Steel Co.	211	O
Sterling TNA•5	179	C
Stewart Iron Works Co., Inc.	188	B
Stop-Motion Devices Corp.	227	L
Stowe-Woodward, Inc.	21	E
Superior Combustion Industries, Inc.	215	Q
Supreme Knitting Mach. Co., Inc.	183	L
Swift & Co., Industrial Soap Dept.	115	C
Tennessee Corp.	202	C
Textile Machine Wks	54	I
Toledo Pipe Threading Mach. Co.	184	H
Toledo Scale Co.	173	K
Tompkins Bros. Co.	180	I
Torrington Co., The (Needles)	23	I
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Turbo Machine Co.	113	T
Unionmatex, Textilmaschinen-Union, G.M.B.H.	39	F RT
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Naugatuck Chemical Div.	143	C
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SEARCHLIGHT SECTION

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H. E. Hilty, Mgr.

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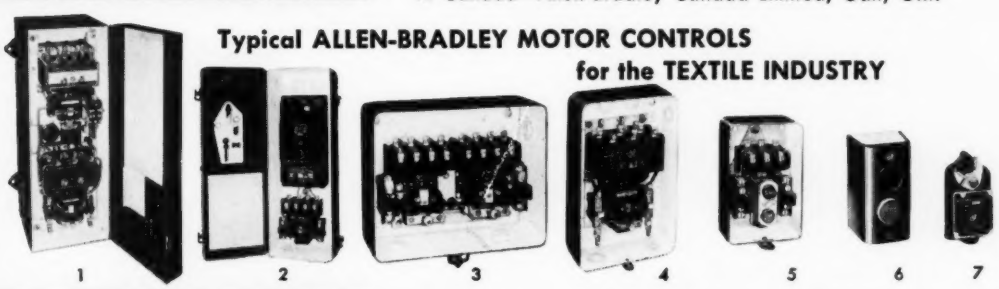

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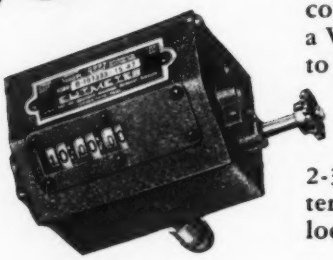

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